

# Remote Control Format

*Reference Manual*





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# Océ-Technologies B.V.

This manual documents the Remote Control Format version 2.5 as implemented in the Océ 4900, 5100, 5120, 5200, G9000, 9400, 9500, 9600, 9700 and 9800 series machines.

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# Chapter 1

## Introduction

*The purpose of this manual is to describe the way remote control is supported by Océ printers. Remote control is implemented as a file/job header, which contains commands and parameters related to the plot itself (for example: pen definitions, scale factor, etc.) and to the plot management (for example: number of copies, paper size, media saver, etc).*



---

# Structure of the manual

This manual is divided into ten chapters, which are summarized below. New users are strongly advised to read Chapter 1.

|                   |  |
|-------------------|--|
| <b>Chapter 1</b>  | <b>Introduction</b> Organization and conventions used in this manual. Description of the features and architecture of the configuration files.   |
| <b>Chapter 2</b>  | <b>Session management</b> Explains the session and context mechanism of the configuration files and job types.   |
| <b>Chapter 3</b>  | <b>Remote commands</b> A description of the application data commands, used in the files for remote control and backchannel commands.  |
| <b>Appendix A</b> | <b>Glossary</b> Definitions of words, abbreviations and acronyms used in the manual.   |
| <b>Appendix B</b> | <b>RCF grammar</b> A description of the syntax of the remote control format.   |
| <b>Appendix C</b> | <b>Grouping commands and settings</b> defines the available commands and their parameters according to whether they apply to the following plot only or to several plots or to all sessions. |
| <b>Appendix D</b> | <b>Scan to file</b> defines the communication protocol for scan to file. (Host to/from controller).  |
| <b>Appendix E</b> | <b>Troubleshooting</b> defines the controller's reaction, whenever an error occurs.  |
| <b>Appendix F</b> | <b>Compatibility</b> A summary of the commands and parameters supported by each printer.   |
| <b>Appendix G</b> | <b>Miscellaneous</b> covers notation conventions and a Reader's comment sheet.   |
| <b>Appendix H</b> | <b>Océ offices</b> gives the official list of Océ offices, Worldwide.  |
| <b>Index</b>      | A general quick reference section.   |



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# Remote configuration file structure

Your Océ plotter/printer can be configured and operated through remote control. This is carried out by downloading configuration files which contain all the plot parameters that must be defined according to your work environment.

Some parameters (such as replot) may only be set from the control panel while others may only be set from the configuration file. For detailed information on the plot parameters that you can define for your plotter model, please refer to your printer's specific User's manual.

The Océ remote configuration file is made up of statements using the Clear Text Encoding specification of the ISO Computer Graphics Metafile (CGM) standard. Specifically, it appears as Application Data elements defined according to the CGM standard.

This section describes the conventions for both Computer Graphics Metafile and CGM Clear Text Application Data formats that you should follow when making up an Océ remote configuration file.

---

## CGM metafile structure

The basic structure of the Océ remote configuration file conforms to the following CGM specification:

```
BEGMF "title";
MFVERSION 1;
MFDESC "Oce RCF, Version=2.x, Type=<type>, Unit=<unit>";
<Oce application data>
ENDMF;
```

**Note:** *RCF version 1 files use the following metafile description:*

```
BEGMF "title";
MFVERSION 1;
MFDESC "Oce Graphics Configuration format V1.00";
<Oce application data>
ENDMF;
```

The keywords **BEGMF**, **MFVERSION** and **ENDMF** are required in any CGM, and have the following meaning:

**BEGMF**        Begin metafile, flags the start of the configuration file and allows the creator (the user or the application) to identify the file with a quoted character string parameter. The length of the string should be less than 127 characters.

“;”            The semi-colon is used as command delimiter.

**MFVERSION**   Metafile version specifies the CGM version (currently 1).

**MFDESC**       Metafile description, is a string parameter used by Océ to identify the version number of our remote control format, as well as the type of remote configuration header (RCH). This string is case-insensitive.

**Version**       must be “2.x” for remote control headers conforming to RCF version 2. An RCH may contain version 2.x in the header, but use commands that are introduced in RCF2.y, where y>x. The older version 1 remote control headers use the MFDESC line described on the previous page.

|             |  |
|-------------|--|
| <b>Type</b> | is either “Header”, “MatrixPrg”, “ScanToFile”, “StatusRequest” or “StatusInfo”.<br>StatusInfo is used for backchannel messages. StatusRequest is only allowed for some particular commands, all other commands using StatusRequest result in an error.   |
| <b>Unit</b> | is either “Metric” or “Inches”. This defines how pen widths, margins, etc. are defined.<br><br><b>Note:</b> <i>The units type inches is available only on the 9800. Océ service may have configured the machine to work in inches or with the metric system. The remote control values must be sent in the units the machine is currently using.</i> |

<**Oce application data**> a number of lines containing the parameters. See next section.

**ENDMF** End metafile specifies the end of the CGM data. It must be terminated by a semi-colon.

**Note:** *Any following line break is part of the plot data. This is especially important when the following plot is an ASCII file.*

---

## Application Data structure

The CGM clear text application data format is defined as follows:

APPLDATA <*command number*> <*data record*> <*terminator*>

These fields must be separated by one or more of the following white space characters:

*space, hor tab, vert tab, carriage return, line feed, form feed*

**APPLDATA** requires an integer and a string as its arguments

**Command number** is an ASCII digit string, representing an integer number which identifies the command. It is limited to 3 digits, and "003", "03", and "3" are all equivalent.

**Command argument** This is a single- or double-quoted string, containing a list of parameters for the requested command (see below).

**Terminator** The terminator separates the different appldata elements. It is either a semi-colon (";") or a slash ("/").

**Note:** *The semi colon is recommended.*

---

## Command arguments

As mentioned above, the command argument (data-record) is a quoted string which specifies the parameters. It contains a (possibly zero-length) sequence of "key=value" pairs, separated by a comma. A white space is allowed both before and after the comma, the string is limited to 3000 bytes.

The **key** is a case-insensitive string of exactly two characters of which the first must be alphabetic, and the second alphanumeric. (That is: [a-zA-Z][a-zA-Z0-9]).

The **value** may be an integer, a fixed-point number, a string or a list.

**Integer (num)** This is a non-negative number in the range [0 to 999999999] (that is nine 9's). This is the maximum range for the decoder. However, every command has its proper limits. Note that you must specify an integer when so requested, "1.0" instead of "1" results in an error!

**Fixed-point (fxp)** This is a non-negative number consisting of maximal 4 significant digits before, and maximum 4 digits after the decimal point (so the allowed range is [0000.0000 to 9999.9999]). Note that "1", "1.", "1.0", and "001.00" all indicate the same fixed point number "0001.0000".

**String (str)** is limited by the following comma or the trailing quote of the data record. This means that a string cannot contain these characters! When specifying a string, do not make it longer than specified for the parameter in question.

**List (lst)** is a list of non-negative integer numbers, enclosed by a pair of angle brackets '<' and '>'. The numbers must be separated from each other by a space or a comma.

---

## Metafile comments

Comments in the metafile must be embedded between "%" characters. Everything between a pair of "%"s is skipped.

Note that this comment format belongs to the metafile, it should not be used outside the BEGMF ... ENDMF.

---

# Decoding an RCF header

---

## Operational behaviour

The decoder starts by reading the first file (the header). It expects the format of the file to be as described in the previous section, and it verifies the version in the MFDESC argument string.

After that, the APPLDATA lines will be processed one by one. They are checked both syntactically and semantically before they will be applied. If the same parameter (or key) is encountered more than once, its last occurrence will be used.

The processing will end when the ENDMF keyword and the following terminator “;” (semicolon) or “/” slash have been encountered.

**Note:** *Multiple remote configuration header (RCH) files (either RCF version 1 or RCF version 2 having the same Type) before a plot will be concatenated. That is, they will be considered as one file. When parameters have been defined twice or more, the last definition is valid. You are recommended not to have multiple RCH files before a plot.*

---

## Incomplete set of parameters

If not all possible parameters of an APPLDATA command are specified, the attributes that are not explicitly specified will be left unchanged.

For example, a pen color can be changed without specifying a pen width, which means that the width of the pen will be left as is.

A command may have so-called mandatory parameters. For example, you cannot define a pen width without specifying the pen number.

---

## Units

Some of the values in RCF version 2 headers are interpreted either in inches or in millimetres, depending on the units setting in the header.

See note in MFDESC on page 11.

The older RCF v1 format expects millimetres.

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## RCF v1 and v2 compatibility

A controller that supports RCF v2 may support the older RCF v1 format (or other revisions of the RCF for that matter), but is not obliged to do so.





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## Chapter 2

# Session management

*The purpose of this chapter is to explain the session and context mechanism of the configuration files and job types.*

*Refer also to appendix C, 'Grouping commands and settings' on page 167.*



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# The configuration files

---

## Session and context

The plotter uses a number of parameters when plotting the user's files. It has defaults for all of them, which can be overruled by sending an RCF header before the plotfile(s).

A plotter has at least two sets of default parameters.

- The first one consists of the **factory defaults** (also known as **FCF**- factory configuration file), they are always present and cannot be modified.
- The second set refers to the **default context** (also known as **user defaults** or **UCF** - user configuration file), which are defined on the plotter's front panel or with the help of a special remote control header.

The **factory defaults** and **default context** files are permanently stored in the plotter. At plotter delivery time, both files have the same settings.

The **default context** is stored in the plotter/printer, and is not lost during a power-off.

Initially (at start-up), a **session context** (also known as **CCF**- current configuration file) is created by copying the plotter's default context. Whenever a remote control header is received, it is applied to this session context. That is, the session context is modified due to the merge with the received RCH.

When the plot data is received, the plot is printed with this (modified) **session context**. (The **session context** is an intermediate file that is primarily used to apply the parameter modifications of the current remote control header to the next plot only, without affecting either subsequent plots or the existing **UCF** parameters.)

At the end of the job, the **session context** is reset to the **user defaults** as defined at that moment, an implicit reload.

**Note:** *All configuration parameters set from the plotter control panel take effect immediately and are directly written into the **UCF**.*

- *However they do not effect a plot that is being processed.*
- *Some control panel parameters require the plotter to be switched off and on.*

---

## Temp user

As explained above, normally a job is printed using settings from the default context. However, a user may set up a specific context to be used for a number of plots, thereby avoiding the use of an remote control format (RCF) header for every file. This is done with the help of the **temp user** feature, which means that the session context created by a remote control header (default context + RCH settings) is kept for future plots (that is, the final reset of the session context does not take place).

If the leading RCH activates the temp user mode, the following jobs will all use this context, and if a job has an RCF header, it will be merged with this modified session context.

The session context is reloaded with the default context at the end of a job that has an RCF header that **explicitly reloads** the default context or factory context.

For a detailed description of the Reset Defaults command, please refer to 'APPLDATA 010 Reset defaults' on page 67.

---

## Implementations - Session management

There is a fundamental difference with respect to the operational behaviour of the different printers and controllers:

**Océ G9000-C and 9500-C** It has one context that is shared between the available interfaces. If temp user is activated by a RCH on the serial interface, a subsequent job that arrives on the parallel port will use it.

**Océ 5100, 5100C, 5200, G9000-S, 9500-S and 9400** Each interface has its own session context, independent of all the others. The sessions interact only when one of them redefines the default context, which is subsequently loaded by the other sessions at the end of a job.

**Océ 9600** The default context can be defined with the help of the graphic user interface (control panel), but not using an RCF header. The temp user feature does not exist, which means that when you want to use parameters which are different from the defaults, an RCH must be sent for **every file**, or a **set job** must be used (see ‘Set print job’ on page 21).

**Océ 9700 and 9800** The default context can be defined with the help of the local user interface (control panel), but not using an RCF header. The temp user feature does not exist, which means that when you want to use parameters which are different from the defaults, an RCH must be sent for **every file**, or a **set job** or **matrix program** must be used (see ‘Set print job’ on page 21 and ‘Matrix print job’ on page 24).

---

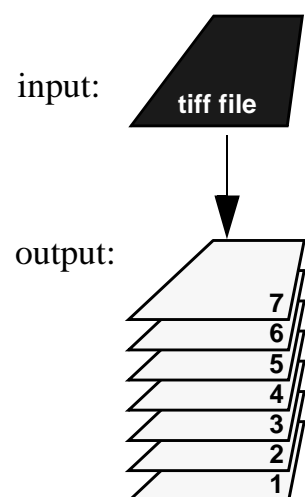
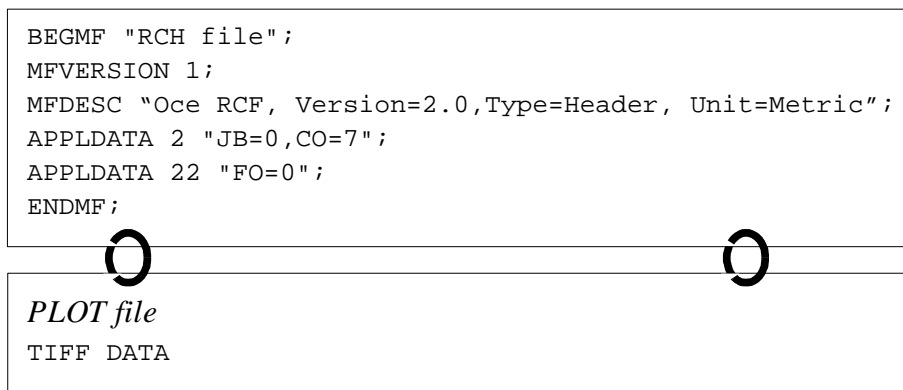
# Job types

There are a number of different job types, ranging from a single plotfile to a pre-programmed documentation set.

---

## Single print job

A single job is just a plot without an RCH, or with an RCH that specifies the job type as 'single'.



[1] Single plot file job example, 7 copies of a TIFF file unfolded.

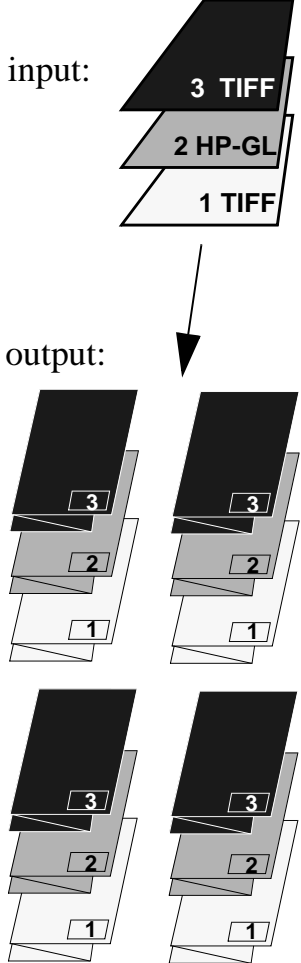
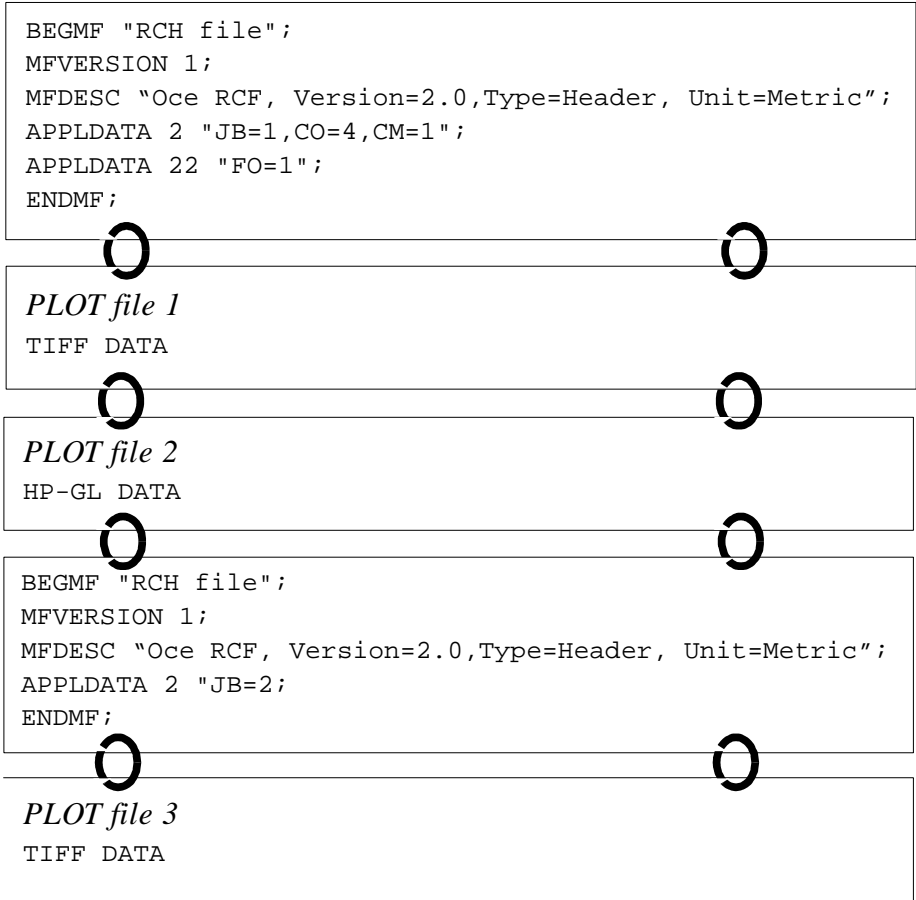
---

## Set print job

A set job consists of a bunch of files that must be processed together because you want to apply some treatment to all of them and specify it only once. The most frequent use of this is no doubt making a number of copies of the whole set of files, but it can also simplify the configuration by sending the proper parameters only once, after which they are applied to all files in the set.

The first plot must be preceded by a special RCH, which flags the start of the set job, and contains the default settings for all the jobs in the set. The last plot in the set must have a special RCH to flag it as being the last plot of the job.

**Note:** An error occurs when a set-start is encountered inside a set, or when a set-end is found without a preceding set-start.



[2] Set job example, 4 sets of three files folded.

This example shows how a series of plot files need two RCHs to be printed as a set.

The first RCH marks the start of the job (APPLDATA 2 "JB=1") and defines the job settings. It defines how many copies (APPLDATA 2 "CO=4") are needed and that the output must be folded (APPLDATA 22 "FO=1").

The last RCH marks the third plot file and defines the end of the job (APPLDATA 2 "JB=2").

If required, an RCH can be added to the other files in the set which will be applied on top of this "set context", and apply to the following plot only.

For example:

```
BEGMF "RCH file";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.0,Type=Header, Unit=Metric";  
APPLDATA 001 "PN=001,PW=0.025";  
ENDMF;
```

could be placed before the HP-GL file, to set pen 1 width to 0.025 mm.

When multiple copies are requested, they can be made **by set** (also known as set-wise) or **by page** (also known as sort-wise). By set means that the copies are made set by set (123, 123, 123,... as in the example on the previous page). By page simply means that the copies are made plot by plot (111, 222, 333,...)

---

## Matrix print job

(Applies to Océ 9800) Matrix jobs allow you to create a number of different print jobs based on the same set of files. The difference between the jobs may be the combination of plots, the media on which they must be printed, a scale factor, etc.

**Example** Imagine the following situation:

The specification of a new product must be distributed. It consists of a specification, a parts list, and the actual mechanical and electronic design.

The distribution is as follows:

- Marketing just wants the specification so that the product can be presented in the catalog.
- Supplies only needs the parts list and the specification.
- Production wants 10 copies of the whole set on polyester.
- Archive: needs everything on A4 sized paper. The job must be punched.

This can be printed in one cycle, by defining a program for each department.

The input looks like this:

File 1: Specification (input size A4)

File 2: Parts list (input size A4)

File 3: Design (input size A2)

The following matrix job results in the requested output.

| <i>Parameter</i> | Program 1<br>(Marketing) | Program 2<br>(Supplies) | Program 3<br>(Production) | Program 4<br>(Archive) |
|------------------|--------------------------|-------------------------|---------------------------|------------------------|
| #copies          | 1                        | 1                       | 10                        | 1                      |
| Paper size       | 1:1                      | 1:1                     | 1:1                       | A4->A4, A2->A4         |
| Media type       | paper                    | paper                   | polyester                 | paper                  |
| File list        | file 1                   | file1, file2            | file1, file2, file3       | file1, file2, file3    |
| Punch            | off                      | off                     | off                       | on                     |

[3] Matrix job example



---

## Matrix program settings

The following list shows what kind of parameters or operations (APPLDATA's) are allowed in a matrix program. More details can be found in the sections that describe these APPLDATA's.

| <i>APPLDATA</i>                   | <i>Matrix program file</i>  | <i>Remote control header file inside a matrix job</i>       |
|-----------------------------------|---|---|
| <i>01 Pen attributes</i>          | No  | Yes   |
| <i>02 Job parameters</i>          | (Partially)<br>Copies<br>Account Id<br>User Id<br>Copy method<br>Plot list                        | (Partially)<br>Job boundary<br>Plot number                  |
| <i>03 Transformations</i>         | (Partially)<br>X scale<br>Y scale<br>Autoscale<br>Enhanced scale<br>Shift (up, down, left, right) | (Partially)<br>Rotation<br>Auto rotate<br>Legend correction |
| <i>20 Stamp</i>                   | Yes   | No  |
| <i>21 Media Selection</i>         | Yes   | No  |
| <i>22 Finishing</i>               | Yes   | No  |
| <i>23 Delivery</i>                | Yes   | No  |
| <i>24 Edge correction</i>         | Yes   | No  |
| <i>25 Framing</i>                 | Yes   | No  |
| <i>26 Original to copy matrix</i> | Yes   | No  |
| <i>27 Host requests</i>           | No  | Yes   |
| <i>29 Image alignment</i>         | Yes   | No  |
| <i>50-59 Languages</i>            | No  | Yes   |

[4] Commands belonging in the MP and in the RCH

---

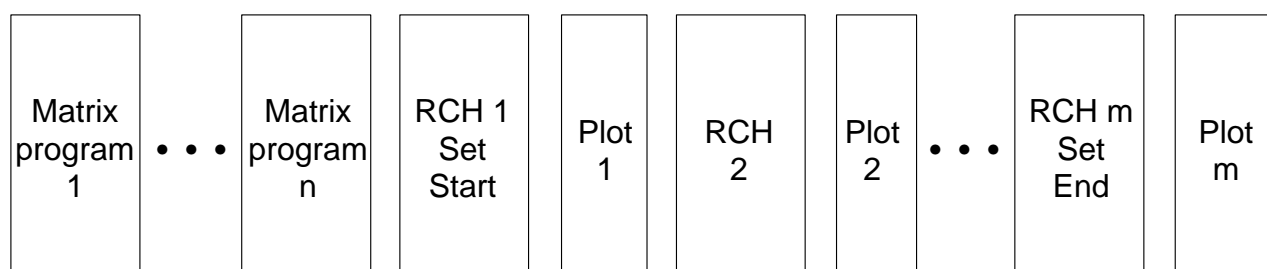
## Matrix job construction

As explained on page 24, a matrix job consists of a number of small programs, and a set of plots.

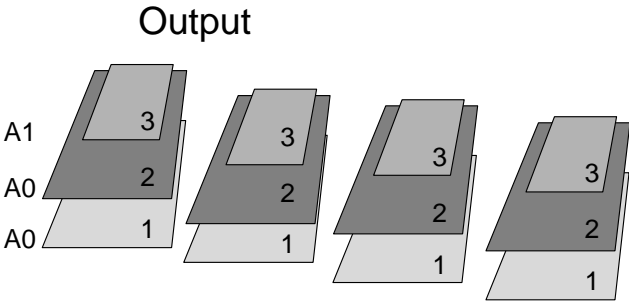
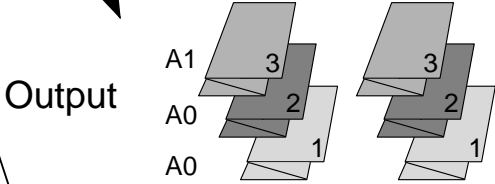
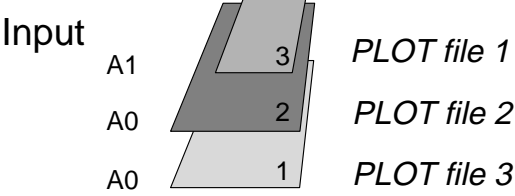
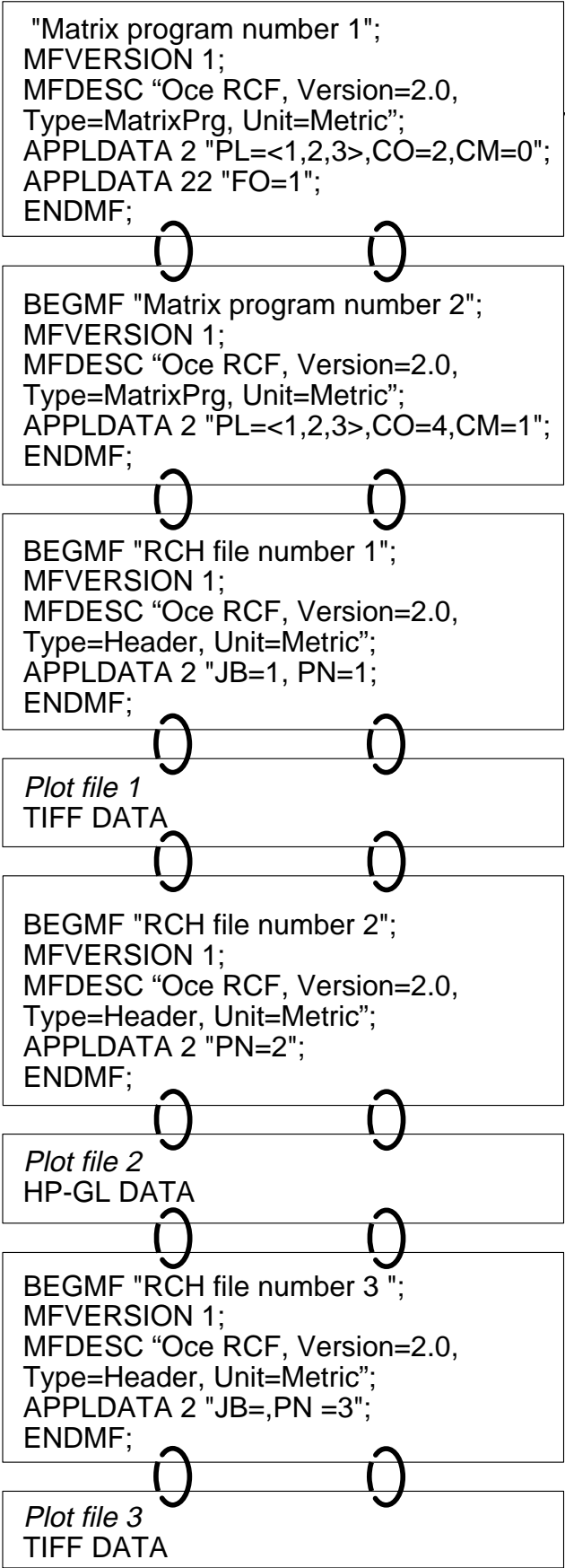
The Matrix Programs are RCF files with "type=MatrixPrg" in the header, and they are followed by a set of plots. The RCH of the first plot should contain a set-start, but it is optional since the first RCH that follows the last matrix program implicitly announces the first plot. The last plot is indicated by a set-end in its RCH.

Each matrix program contains a list, specifying which plots of the set should be printed.

The RCH of the first plot also specifies a 'set-context' that will be used for all files in the job (useful for pen settings for example). The RCH of the other plots in the set will be applied on top of this, as described for the set-jobs, on page 21.



[5] Matrix job construction



[6] Matrix job example: Two matrix programs and three plot files

---

## Single print jobs with overlays

The mechanism of overlays enables the user to merge several plots. An unlimited number of files may be merged, of any kind (vector or raster) and of any language the controller recognizes.

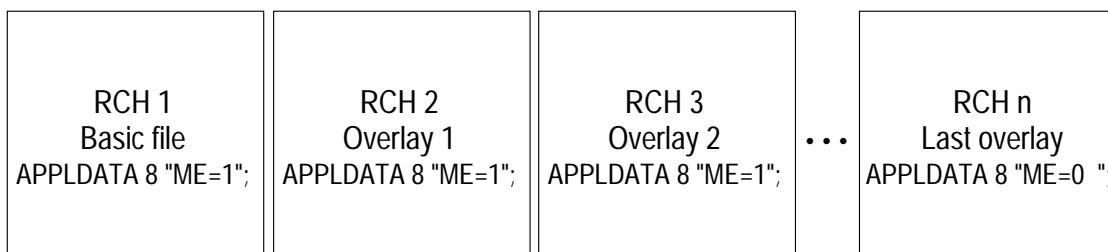
This feature has been added in RCF2.4.

**Basic file** In this document, the basic file refers to the first file which will be put in an empty frame buffer. It determines the maximum size of the plot, the selected paper, the paper handling functions (folding, etc.).

**Overlay file** An overlay file is a file that is merged with the current contents of the frame buffer. It appears on top of the basic file and any previous overlay files.

**Overlay construction** Overlay files have the same structure as basic files. They differ through the definition of APPLDATA 8 Template/Merge.

The RCH of the basic plot must contain an ME=on(1), and all following plots also containing ME=on(1) will be merged, up to and including the plot that has an RCH containing ME=off(0).



[7] Overlay construction

The basic file and overlay file are preceded by an RCH with "Type=Header" in the header.

**Settings for overlays** Some of the APPLDATAs listed in this document can be used in the Remote Control Header of the overlay file to specify:

- the language parameters for the overlay (APPLDATAs 50, 51, 53, 54, 56, 58, 59). See page 104 to page 124.
- scaling of the overlay and rotation relatively to the basic file (a combination of APPLDATAs 3 and 21). See page 47 and page 77.
- position relatively to the basic file (APPLDATAs 3 and 29). See page 102.
- the merging method (APPLDATA 8). See page 61.

Only a few parameters among these commands are used in the RCH of overlay files. The behaviour of these parameters, which generally differs when placed in the overlay's header is described within a separate paragraph for each description.

**Clipping behaviour** The size of the basic plot defines the size of the final plot. Even if the basic file's image is smaller than the paper size, the white margin around a drawing cannot be used for positioning overlays if it is outside the basic image's plot size (Bounding box).

**Limitations** If the basic plot is too big to fit in the Frame buffer, the merge option will be bypassed for this plot, and the next plot will be considered as a new basic plot if the merge option is set to on.

In the particular case where the size of an overlay plot is not known at the beginning of the rasterization, it will be positioned at the top of the basic plot because its height is not known (the horizontal alignment will stay the same).

---

## Examples

This section aims to illustrate a few combinations of APPLDATAs which scale and position an overlay relatively to a basic file.

Scale the overlay file by 141%, rotate 90 degrees relatively to the basic file and position it in the left center of the basic file:

```
APPLDATA 3 "XS=1.41, YS=1.41, RO=90, AS=0, AR=0";  
APPLDATA 29 "LR=0, TB=2";
```

Scale the overlay to make it fit into an A3 format:

```
APPLDATA 3 "AS=1";  
APPLDATA 21 "PF=3, AF=0";
```

Scale the overlay down and/or rotate if necessary, so that it fits into the basic file's bitmap (this prevents the overlay being clipped):

```
APPLDATA 3 "AS=1";
```

These parameters may be combined with those defined in the remote control header of the basic file, which apply to the merged (basic + overlay) file.

---

## Set print jobs with overlays

Overlays are allowed inside set jobs, but the end of a set job forces the end of the merge set.

---

## Matrix print jobs with overlays

A matrix job references the plots with an identification number. The use of overlays has not been yet defined in matrix jobs.

---

## Implementation - jobs

The Océ 9800 is currently the only machine that supports the Set jobs and Matrix jobs features, the others only implicitly support what is referred to as single jobs.

The overlay feature is only supported by the Océ 9700 and 9800. It is only possible in the printing process. Overlay does not apply to copying or scanning.

The Océ 9600 only supports Set jobs but not Matrix jobs (Release 1 firmware).

---

# Chapter 3

## Remote commands

*This chapter describes the commands used in the remote configuration files:*

- *What the command does*
- *Which arguments it accepts and the allowed values*
- *Whether or not the command is optional*
- *The default values*
- *Whether or not it can be stored permanently*
- *If it is a command which causes an immediate action, or an attribute to be used later on.*



---

# Format of the following sections

The following sections in this chapter describe the available appldata commands. They share the same format, as explained below:

---

## Section header

The section header specifies both the command number and as its function. It may also contain:

*(RCF 1 only)* indicating that it is a command that only exists in the first version of the remote control format.

*(RCF 2.x)* the command is introduced in the version 2.x of the remote control format.

*nothing* No remark means that the command is valid for all versions. If a command has been extended, this is noted in the text. (For example, additional languages, parameters, etc.).

---

## Description

A short paragraph, explaining briefly what the command does.

---

## Syntax

Gives the syntax of the whole appldata line, and a table explaining the parameters and their legal values:

**APPLDATA nnn** "P1=val1, P2=val2, P3=val3, P4=val4";

| <b>parameter</b> | <i>Type</i> | <i>Meaning</i>               |
|------------------|-------------|------------------------------|
| <i>val1</i>      | <num>       | val1 is an integer number    |
| <i>val2</i>      | <fxp>       | val2 is a fixed-point number |
| <i>val3</i>      | <str>       | val3 is a string parameter   |
| <i>val4</i>      | <lst>       | val4 is a list               |

[8] Example of APPLDATA attributes



---

## Arguments

Each parameter is described in detail. If the parameter is mandatory, it is mentioned here.

---

## Examples

A paragraph which contains one or more examples on how the command can be used.

---

## Notes

Additional remarks as required.

# APPLDATA 000 Print plotter config

## Description

This command can be used to print the plotter's configuration, both the user's part of it as well as the service settings. The configuration actually printed will depend on the machine and the firmware.

## Syntax

**APPLDATA 000** "TY=Type, PW=Password";

| <b>parameter</b> |    | <i>Type</i> | <i>Meaning</i>  |
|------------------|----|-------------|---|
| <i>Type</i>      | TY | <num>       | Plot configuration, either the user config (0), the service config (1), or both (2) |
| <i>Password</i>  | PW | <num>       | Password for the service configuration  |

## Arguments

**TY** This mandatory parameter specifies what should be plotted. User configuration refers to the user-accessible part of all settings in the session context, which is not necessarily identical to the default context as seen on the printer's control panel.

A password is required in order to plot the service settings (calibration, etc.).

**PW** An optional parameter specifying the password for the service configuration. Can be omitted when only the user configuration is plotted.

---

## Examples

To plot the user configuration:

```
APPLDATA 000 "TY=0";
```

To plot both the service and the user configuration:

```
APPLDATA 0 "TY=2, PW=unknown";
```

---

## Note

Whenever both configurations are requested but the specified password is wrong, only the user configuration will be printed.

---

# APPLDATA 001 Pen attributes

---

## Description

This command is used to define the pens, their width, color, etc. for the interpretation of vector files (BGL, HP-GL/2, CalComp, etc.). It is always applied to HP-GL files, but for the other languages, it depends on the value of the Pen Priority parameter (see the APPLDATA's for those languages).

---

## Syntax

**APPLDATA 001** "PN=Pen number, PW=Pen width, PP=Pen pattern, PC=Pen color, TR=Transparency, LE=Line end, LJ=Line join, ML=Miter limit";

| <b>parameter</b>    |    | <i>Type</i>        | <i>Meaning</i>   |
|---------------------|----|--------------------|--|
| <i>Pen number</i>   | PN | <num><br><n1>-<n2> | A single pen specified by a pen number, 1 to 999<br>A range of pens: n1-n2, 1 <= n1 <= n2 <= 999               |
| <i>Pen width</i>    | PW | <fxp>              | Pen width in millimetres or inches   |
| <i>Pen pattern</i>  | PP | <num>              | Pen pattern: 1-16 are gray scales (1=white, 16=black), 17-32 are Océ patterns, 33-40 are user defined patterns |
| <i>Pen color</i>    | PC | <num><br><lst>     | Pen color, black (0), hidden (2)<br>Pen color in RGB; <rrr ggg bbb>  |
| <i>Transparency</i> | TR | <num>              | Overlapping patterns are transparent (0), or opaque (1)  |
| <i>Line end</i>     | LE | <num>              | Butt (0), square (1), round (2), triangle (3), major (4)   |
| <i>Line join</i>    | LJ | <num>              | None (0), round (1), triangle (2), miter (3), miter/bevel (4), or bevel (5)                                    |
| <i>Miter limit</i>  | ML | <fxp>              | Defines the limit for the miter length/line width ratio  |

**PN** Pen number is a mandatory parameter specifying either a single pen or a range of pens to be modified.

You cannot modify pen 0, although it is a pen like all others, in HP-GL/2, for example.


The range is specified using a hyphen '-'. For example, 2-45 includes pens two to forty-five.

**PW** Pen width is an optional parameter specifying the width of the pen(s), which will be rounded to the nearest supported number of pixels.

The supported range is machine-dependent.

The pen width may be set to 0.0 mm, which will result in a line with the smallest width that is still visible (for example a one pixel line on the G9000 series machine).

The minimum and maximum value the controllers are able to handle is defined in the following table:

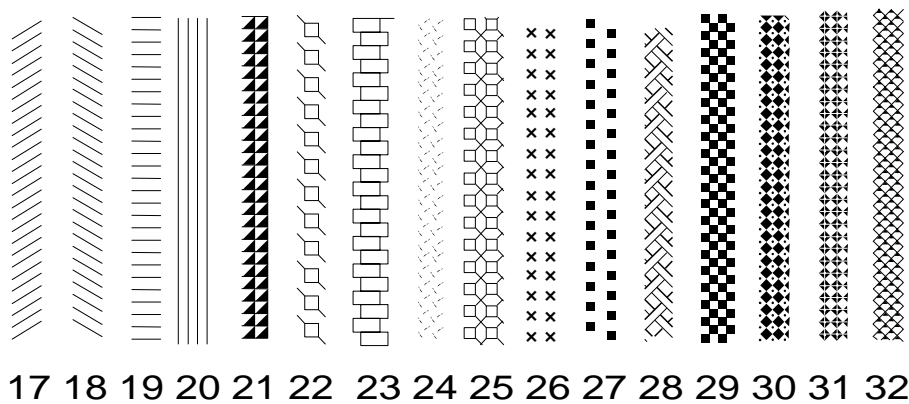
|  <b>controller</b> | <i>Resolution</i> | <i>Minimum</i> | <i>Maximum</i>      | <i>Default</i>     |
|---|-------------------|----------------|---------------------|--------------------|
| ME  | 300               | 0.08mm         | 10.75mm             | 0.25mm             |
|   | 400               | 0.06mm         | 8.06mm              | 0.19mm             |
| FA, FB, FP, FR  | 300               | 0              | 10.75mm             | 0.25mm             |
|   | 400               | 0              | 10.75mm             | 0.19mm             |
| FS  | 400               | 0              | 16.25mm<br>(0.639") | 0.19mm<br>(0.007") |

[9] Maximum and minimum pen widths

**RCF 1** assumes that the given widths are in **mm**'s,

**RCF 2.x** interprets it according to the **unit setting** in the header.

**PP** Pen pattern is an optional parameter. 40 patterns are available of which the first 16 (1-16) correspond to increasing shades of gray (1=white, 16=black), the next 16 (i.e. 17-32) are Océ defined patterns and the last 8 (33-40) may be user defined. See page 65.



[10] Océ defined pen patterns

**PC** Pen color is an optional parameter.

In RCF v1 and v2.0, it can be specified as either black (0) or hidden (2). Color 1 used to be red for bi-color paper, but is not available in any product.

In RCF 2.1 or later, a list is expected, containing 3 values between [0-255], specifying the Red, Green and Blue components.

**TR** Transparency, an optional parameter, which can be enabled (0) or disabled (1).

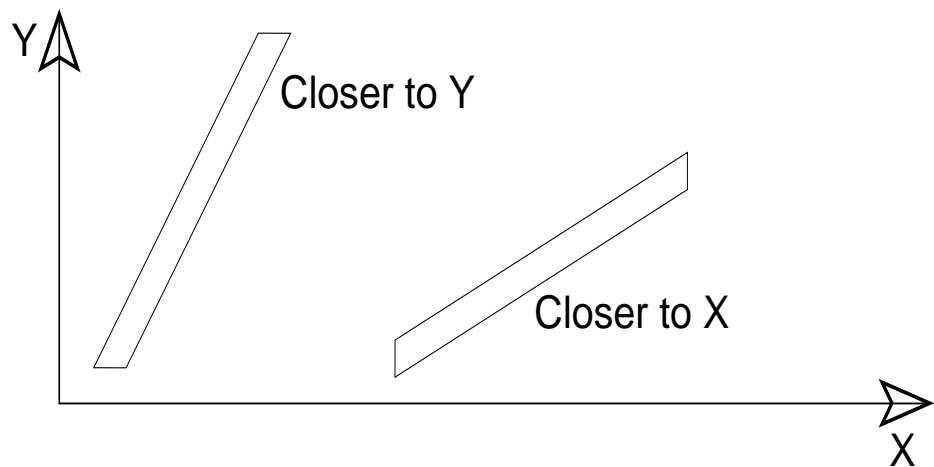
When enabled, overlapping lines and polygons shine through, the white pixels are transparent. When disabled, only the last applied fill is visible and completely hides the ones underneath.

**LE** Type of line-end. Not all languages support all types of line-ends, as indicated in the table:

|                | <i>Butt</i> | <i>Square</i> | <i>Round</i> | <i>Triangle</i> | <i>Major</i> |
|----------------|-------------|---------------|--------------|-----------------|--------------|
| <i>HP-GL/2</i> | •           | •             | •            | •               |              |
| CalComp        | •           | •             | •            |                 | •            |
| <i>BGL/VDF</i> |             | •             | •            |                 |              |

[11] Line end types supported

Regarding CalComp, ‘butt’ is known as ‘flat’ and line end type ‘major’ means that the line-end will be horizontal if the line more closely aligns to the Y axis, and vertical if it aligns more closely to the X axis:



[12] CalComp line end type "Major"

This parameter has been added in RCF 2.1.

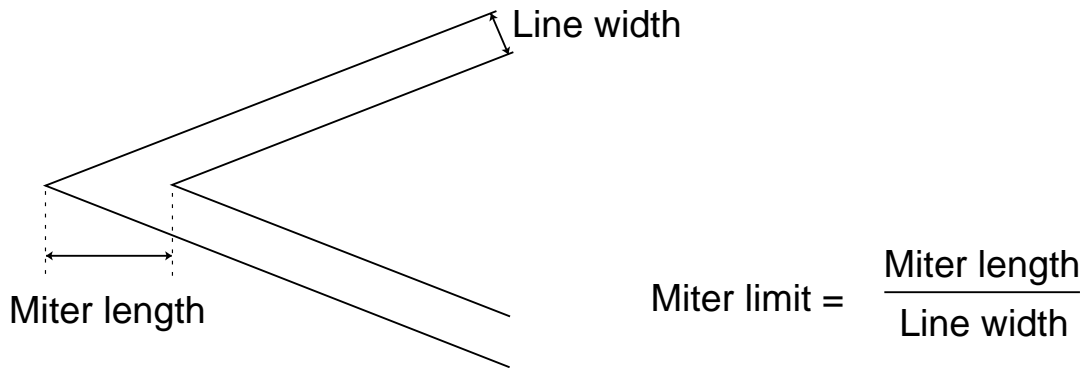
**LJ** Type of line-join. Not all languages support all types of line-joins, as indicated in the table:

|                | <i>butt</i> | <i>square</i> | <i>round</i> | <i>triangle</i> | <i>major</i> |
|----------------|-------------|---------------|--------------|-----------------|--------------|
| <i>HP-GL/2</i> | •           | •             | •            | •               |              |
| CalComp        | •           | •             | •            |                 | •            |
| <i>BGL/VDF</i> |             | •             | •            |                 |              |

[13] Line join types supported

This parameter has been added in RCF 2.1.

**ML** The miter limit specifies the ratio between the miter length and the line width.



[14] Miter limit

This parameter has been added in RCF 2.1.

---

## Examples

Define pens 1-10 as transparent gray, width 1 mm:

```
APPLDATA 1 "PN=1-10, PW=1.0, PP=4, PC=0, TR=0";
```

Make pen 7 invisible, leaving its width, pattern and transparency unchanged:

```
APPLDATA 1 "PN=7, PC=2";
```

---

## Notes

For a correct setup of pens on the 5100C, the command APPLDATA 015 color mode must be sent before the pen attributes command APPLDATA 001.

When the same pen is redefined multiple times, the last definition applies.

Only the pen number parameter is mandatory. The others may be omitted, leaving the corresponding pen attribute unchanged.

One APPLDATA must be sent for each different pen configuration. That is, the following command does not work:

```
APPLDATA 1 "PN=1-5, PW=1.0, PC=0, PN=6, PW=1.5, PC=2";.
```

Instead, use the following two commands:

```
APPLDATA 1 "PN=1-5, PW=1.0, PC=0";
```

```
APPLDATA 1 "PN=6, PW=1.5, PC=2";.
```



---

# APPLDATA 002 Job parameters

---

## Description

This command defines the parameters of the plot file or different jobs that may be used: single jobs, set jobs or matrix jobs.

**Note:** *The parameters of this command may be found in the plot header (RCH) or in the matrix program (MP).*

---

## Syntax

**APPLDATA 002** "CO=Copies, LP=Long plot, EM=Efficiency manager, BY=Bypass, JI=Job identification, AI=Account identification, UI=User identification, JB=Job boundary, AC=Accounting, CM=Copy method, PL=Plot list, PN=Plot number, DU=Duplex";

| <b>parameter</b>          |    | Type   | Meaning  |
|---------------------------|----|--------|--|
| <i>Copies</i>             | CO | <num>  | Number of copies to print, 1...999                                       |
| <i>Long plot</i>          | LP | <num>  | Allow long plot, up to 15 meters. Either disabled (0), or enabled (1).   |
| <i>Efficiency Manager</i> | EM | <num>  | Usually referred to as media saver, either disabled (0), or enabled (1). |
| <i>Bypass</i>             | BY | <num>  | Plot should accumulate (0), be forced (1), or bypass (2).                |
| <i>Job Id</i>             | JI | <num>  | A nine-digit number identifying the job.                                 |
| <i>Account Id</i>         | AI | <num>  | A nine-digit account number.   |
| <i>User Id</i>            | UI | <num>  | A nine-digit number user identification.                                 |
| <i>Job boundary</i>       | JB | <num>  | Single file (0), start of set (1), end of set (2).                       |
| <i>Accounting</i>         | AC | <num>  | Either enabled (1) or disabled (0).                                      |
| <i>Copy method</i>        | CM | <num>  | Make the copies by page (0) or by set (1).                               |
| <i>Plot list</i>          | PL | <list> | List of plots for the specified matrix program.                          |
| <i>Plot number</i>        | PN | <num>  | Number of the plot inside the matrix job.                                |
| <i>Duplex</i>             | DU | <num>  | Duplex printing, off (0), long side (1) or short side (2).               |

---

## Arguments

**CO** Number of copies to plot. RCF 1 allowed 99 copies maximum, increased to 999 for RCF 2.0 and later.

**LP** Long plot. If enabled, plots may be up to 15 meters.

**Note:** *For some machines (for example 5100C) if the Long Plot function has been set to "Disable" at the control panel, the RCF parameter LP is not supported.*

**EM** Enable media saver, only for this job. Should really be set in the default context.

**BY** Bypass, describes how the next the job will interact with the media saver. The job can be "accumulated". That is, added to the list of waiting jobs inside the media saver, or it may "bypass" the media saver altogether, causing it to be plotted immediately. The "force" setting flushes the media saver, all currently queued jobs are printed immediately.

**JI** Job identification set by the host to track the print jobs. This parameter is added in RCF 2.4. The JI parameter replaces the old PI Plot Id.

**AI** Accounting Id, used for accounting purposes (see 'APPLDATA 103 Accounting information' on page 138). This parameter is added in RCF 2.0.

**UI** User Id that identifies the user that has sent the job. This parameter is added in RCF 2.0.

**JB** Defines the boundaries of jobs consisting of a sequence of plots. This parameter has been added in RCF 2.0. It applies as follows to the defined job types:

**Single job** The job consists of only one plot, the JB parameter is not needed in that case (it defaults to 0, single file). See 'Job types' on page 44 and the example on page 21.

**Set job** The RCH in front of the first must contain a set-start (JB=0), and the RCH in front of the last file of the job must contain a set-end (JB=1). See 'Job types' on page 44 and the example on page 21.

**Matrix job** The start of a matrix job is flagged by the first matrix program. The RCH in front of the first plot after the matrix program(s) implicitly contains a set-start. That is, it is optional.

However, the RCH in front of the last file must contain the set-end (JB=1) in order to indicate the end of the matrix job. See examples on 24 and 24.

**AC** When APPLDATA 103 is returned (via APPLDATA 027), its parameter AS contains the value set in this AC parameter. This can be used by the host to identify jobs that were not meant to be accounted. This parameter is added in RCF 2.0.

**CM** The copy method parameter specifies the way the copies should be made. Either by page (0), or by set (1).

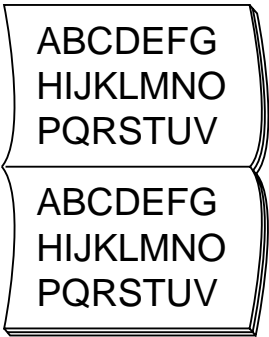
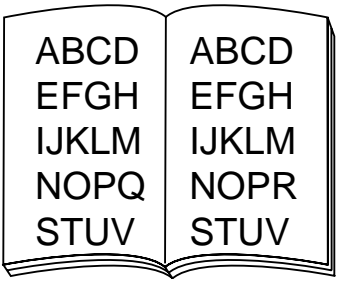
For example the set that consists of plot1, plot2, plot3, will produce 1 1 1, 2 2 2, 3 3 3, when printing by page. The same set will produce copies 1 2 3, 1 2 3, 1 2 3 when printing by set. This parameter has been added in RCF 2.1.

**PL** This parameter specifies the plots that should be printed for the given matrix program. It is a list of numbers as specified for each plot in the matrix. This parameter has been added in RCF 2.1.

**PN** This parameter specifies the sequence number of the plot in the matrix job, the matrix program(s) use it to identify the plot. This parameter has been added in RCF2.1. The PN parameter is ignored at the moment, plots are referenced sequentially (1,2,3,4...).

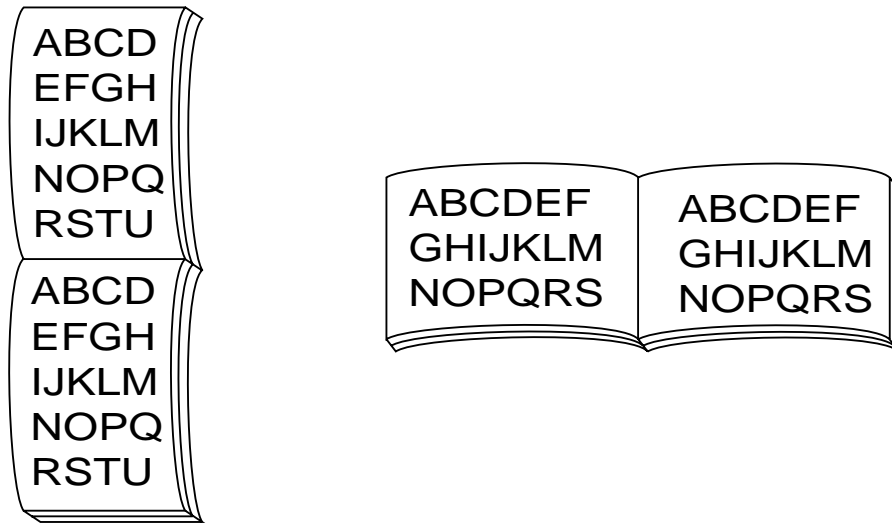
**DU** This parameter specifies the duplexing mode, either

- off (0) The job is printed on one side of the paper
- long side (1) This setting is suitable for sheets printed in portrait format. The back can be read correctly if the sheet is used transversely to the direction of travel (Book format).



[15] Duplexing long side

- short side (2). The back can be read correctly if the sheet is used in the direction of travel of the paper (Calendar format). This setting is suitable if four A4 pages are to be printed on one A3 sheet, for instance.



[16] Duplexing short side

This parameter has been added in RCF2.5.

---

## Notes

The 'Bypass=force' option does not flush the job that follows the RCH.

If the APPLDATA is specified in the MP or RCH where it is not allowed, it is ignored and a job description error is generated.

---

**Caution:** *Both the accumulate and the bypass settings are actually job attributes, while the force plot is more like a command. However, the force setting is stored in the context and may even be stored in the user configuration file, so be careful when combining this with the temp user mode (see 'APPLDATA 010 Reset defaults' on page 67).*

---

## Job types

This section describes specific job-types, as defined in the metafile description, (see MFDESC on page 10) and their related limitations. See 'Job types' on page 21 for additional information.

The following table shows where the parameters of this command must be used in function of the job type.

| <b>Parameter</b>   | <i>Job Type</i>             |            |                             |
|--------------------|-----------------------------|------------|-----------------------------|
|                    | <i>Single</i>               | <i>Set</i> | <i>Matrix</i>               |
| <i>Copies</i>      | Remote configuration header | Set header | Matrix program              |
| <i>Copy method</i> | Remote configuration header | Set header | Matrix program              |
| <i>Plot list</i>   | -                           | -          | Matrix program              |
| <i>Plot number</i> | -                           | -          | Remote configuration header |

[17] Parameters as a function of job type

### **Set jobs**

Manual sheet printing is not allowed within a set, the request will be ignored.

If there is a time-out (that is, no more data), the pages received so far will be printed.

If the user selects 'cancel', the whole set will be read until its end and then discarded.

## Matrix jobs

The following table explains where the commands must be placed in a matrix job:

| <b>Appldata</b>         |       | <i>Matrix program</i> | <i>Remote control header</i> |
|-------------------------|-------|-----------------------|------------------------------|
| Pen attributes          | 01    | No                    | Yes                          |
| Job parameters          | 02    | Yes                   | Yes                          |
| Transformations         | 03    | Partially             | Partially                    |
| Stamp                   | 20    | Yes                   | No                           |
| Media selection         | 21    | Yes                   | No                           |
| Finishing               | 22    | Yes                   | No                           |
| Delivery                | 23    | Yes                   | No                           |
| Edge correction         | 24    | Yes                   | No                           |
| Framing                 | 25    | Yes                   | No                           |
| Original to Copy matrix | 26    | Yes                   | No                           |
| Host requests           | 27    | No                    | Yes                          |
| Image alignment         | 29    | Yes                   | No                           |
| Languages               | 50-59 | No                    | Yes                          |

Bypass cannot be used in matrix jobs; if present, it is ignored and a job description error is generated.

The number of matrix programs is limited to 40, any others are ignored and a job description error is generated.

There can be up to 40 different reductions (scale factors), one for each matrix program. (Enlargement is not possible).

One matrix job cannot use more than four different rolls.

If there is a different print orientation (due to (auto)rotation) for one plot in different matrix programs, the controller reports a job description error and generates the bitmap according to the settings of the first referenced matrix program.

---

# APPLDATA 003 Transformations

---

## Description

This command is used to rotate, scale, mirror, or shift the plot. Some of the parameters are also used to position overlays relatively to the basic plot.

---

## Syntax

**APPLDATA 003** "XS=X scale, YS=Y scale, RO=Rotation, MR=Mirror, AS=Autoscale, ES=Enhanced scale, SU=Shift up, SD=Shift down, SL=Shift left, SR=Shift right, AR=Auto rotate, LC=Legend correction"

| <b>parameter</b>         |    | <i>Type</i> | <i>Meaning</i>   |
|--------------------------|----|-------------|--|
| <i>X Scale</i>           | XS | <fxp>       | X scale (or zoom) factor, 0.0500 - 20.0000   |
| <i>Y Scale</i>           | YS | <fxp>       | Y scale (or zoom) factor, 0.0500 - 20.0000   |
| <i>Rotation</i>          | RO | <num>       | Rotation angle, 0, 90, 180, or 270 degrees   |
| <i>Mirror</i>            | MI | <num>       | Either no mirror (0), mirror on the X axis (1), or mirror on the Y axis (2). Also known as plot symmetry |
| <i>Auto scale</i>        | AS | <num>       | Either disabled (0), to-format (1), or best-fit (2). Also known as automatic zoom.                       |
| <i>Enhanced scale</i>    | ES | <num>       | Disabled (0) or Enabled (1). Also referred to as enhanced zoom.  |
| <i>Shift Up</i>          | SU | <fxp>       | Upward shift, 0 to 1219mm (48")  |
| <i>Shift Down</i>        | SD | <fxp>       | Downward shift, 0 to 1219mm (48")  |
| <i>Shift Left</i>        | SL | <fxp>       | Left shift, 0 to 914mm (36")   |
| <i>Shift Right</i>       | SR | <fxp>       | Right shift, 0 to 914mm (36")  |
| <i>Auto Rotate</i>       | AR | <num>       | Automatic rotation, either disabled (0), folding (1), or productive (2)                                  |
| <i>Legend correction</i> | LC | <num>       | Title block positioning, disabled (0) or enabled (1)   |

---

## Arguments

**XS** This is the scale factor along the X axis of the drawing. The allowed range is from 0.0500 to 20.0000 for RCF 1. For RCF 2, see the printer User's documentation for details.

**Overlays** This is the scale factor along the X axis of the overlay file relative to the basic fileS.

**YS** This is the scale factor along the Y axis of the drawing. The allowed range is from 0.0500 to 20.0000 for RCF 1. For RCF 2, see the printer User's documentation for details.

**Overlays** This is the scale factor along the Y axis of the overlay file relative to the basic file.

**RO** The angle over which the drawing is rotated (counter-clockwise), either no rotation (0 degrees), 90, 180, or 270 degrees. This rotates the whole drawing (including the axis) around the origin, it does not affect X scale or Y scale.

**Overlays** Rotates the overlay (by 0, 90, 180, or 270 degrees) relative to the basic file.

**MR** Whether or not the drawing is mirrored, and if so, in the X or the Y axis of the drawing. Note that mirror function does not shift the drawing, which may be partially clipped when mirror is selected.

**Overlays** The mirror option is ignored for overlay files.

**AS** Auto scale (also known as automatic zoom):

- 1 Scale to format selects an automatic scaling factor, as a function of the paper format and the plot size (Bounding box). The paper format can be specified using 'APPLDATA 021 Media selection' on page 77.
- 2 Best-fit means that a plot bigger than the available paper (as mounted on the machine) will be scaled down and/or rotated to make it fit. This allows plots not to be clipped. (Not supported by Océ 9700 and 9800 printers).

The auto scale parameter is added in RCF 2.0. The best-fit option has been introduced in RCF 2.2.

**Overlays** Scale to format selects an automatic scaling factor, as a function of the overlay's size (Bounding box) and the paper format that can be specified in the header of the overlay using 'APPLDATA 021 Media selection' on page 77.



The best-fit scaler option is ignored for overlay files.

**ES** Enhanced-scale (also known as enhanced-zoom) controls the scaling of the pen width.

0 If disabled, the full image is scaled, including the vector lines.

1 If enabled, the width of the vector lines doesn't change, whatever the zoom factor.

This parameter is added in RCF 2.0.

**Overlays** Same as basic file.

**SU** Upward shift along the paper feed axis. May be given in mm or in inches, depending on the selected unit setting in the header. This parameter is added in RCF 2.0.

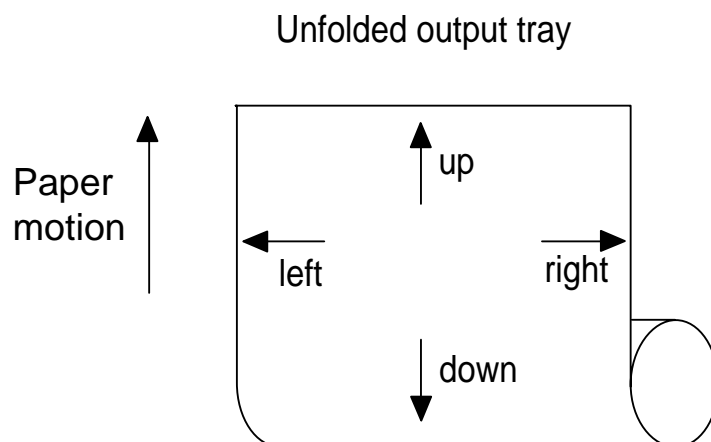
**SD** Downward shift along the feed axis of the paper, in mm or in inches. This parameter is added in RCF 2.0.

**SL** Leftward shift along the cross-feed axis. May be given in mm or in inches, depending on the selected unit system. This parameter is added in RCF 2.0.

**SR** Rightward shift along the cross-feed axis, in mm or in inches. This parameter is added in RCF 2.0.

**Overlays** Shifts the overlay bitmap relatively to the basic file. Done after the rotation RO and alignment (APPLDATA 29 LR and TB) functions.

**Note:** *If both shift up and shift down are given, the last one is used. The same applies for shift left and shift right.*



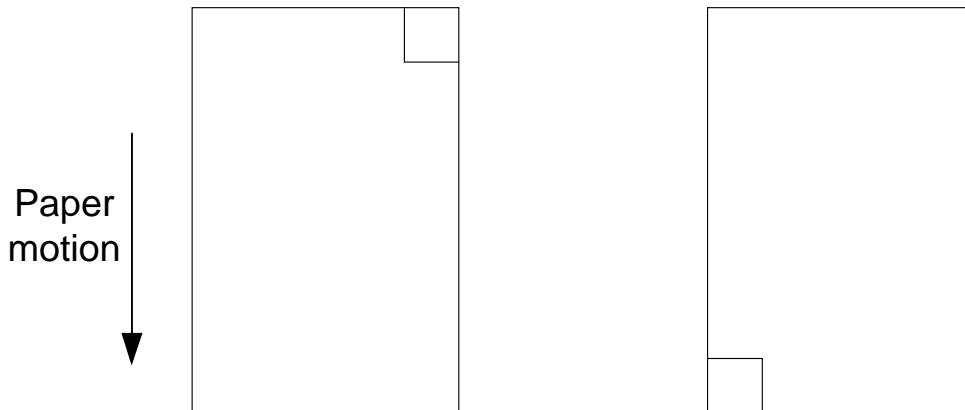
[18] Shift directions

**AR** Auto rotation:

- 1 Folding, the drawings will be automatically rotated 90°, if needed, in order to have the legend (title block) on top *after folding* (which depends on the folding method used).
- 2 Productive, the drawings will be printed in landscape when possible, in order to achieve the highest productivity. If the landscape format is not available, the portrait format is used instead (For example, an A1 will be printed using the A1-roll instead of the A0-roll that would be needed for the landscape format). If auto rotation is enabled, the rotate parameter is ignored. This parameter is added in RCF 2.0.

Ignored for overlay files.

**LC** If title block position (legend correction) is enabled, it will cause the plot to be rotated 180 ° on the paper. This is independent of the Rotate parameter.



[19] Title block position (Legend correction)

When a plot must be folded, the machine is able to print it in portrait, but it doesn't know whether the drawing is upside-down or not. Since that depends on the printer driver (and possibly also on the application), the LC setting should be set to make sure the title block is located in the correct corner. (This need be done only once, if the drawings are always generated with the same application and driver).

The LC setting is added in RCF 2.2, and only active when the Auto Rotate parameter is set to productive or folding.

**Overlays** Ignored for overlay files.

---

## Examples

Scale the plot by a factor 2 in both X and Y, rotate it 90 degrees:

```
APPLDATA 3 "AS=0, AR=0, XS=2, YS=2, RO=90";
```

Scale the overlay by 200 % and place in the center of the basic file, rotate the whole bitmap 180 degrees:

### **RCF basic file**

```
APPLDATA 8 "ME="1";
```

```
APPLDATA 3 "AR=0, RO=180";
```

### **RCF overlay file**

```
APPLDATA 8 "ME=0";
```

```
APPLDATA 3 "AS=0, XS=2, YS=2";
```

```
APPLDATA 29 "LR=2, TB=2";
```

---

## Notes

Maximum and minimum scale factors are machine dependent.

If autoscale AS and auto rotate AR are enabled, parameters X scale XS, Y scale YS and Rotation RO are ignored. Therefore, in order to scale or rotate using XS, YS and RO, the autoscale AS and auto rotate AR must both be set to 0.

To avoid possible conflict between autoscale and X scale/ Y scale, in printers which use the FRISCO controller, if you want to use X scale and Y scale, set AS = 0.

---

# APPLDATA 004 Océ emulation

(RCF 1 only)

---

## Description

This command is used to select the Océ emulation mode, with the corresponding parameters. It selects BGL or VDF (depending on the current value of the 'DF' option), even if no parameters are given.

**Note:** *This command is replaced by `appldata53` (BGL) and `appldata54` (VDF).*

---

## Syntax

APPLDATA 004 "DF=Data format, OR=Origin, ST=Step, FN=Font number, FT=Font type, CH=Character set, TY=Océ plotter type";

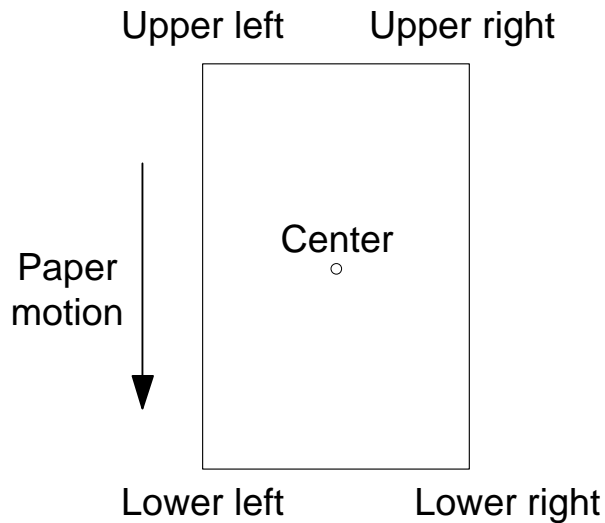
| <b>parameter</b>        |    | Type  | Meaning  |
|-------------------------|----|-------|--|
| <i>Data Format</i>      | DF | <num> | Plot language, BGL (0) or VDF (1)  |
| <i>Origin</i>           | OR | <num> | Plot origin, LL (0), LR (1), UL (2), UR (3), Center (4)                  |
| <i>Step</i>             | ST | <fxp> | Unit of coordinate system in microns, 12.5, 25, 50, or 100 micron        |
| <i>Font Number</i>      | FN | <num> | Font number, either primary (1), or secondary (2)                        |
| <i>Font Type</i>        | FT | <num> | Font type, Isoarc (0), Din17 (1), Leroy (2), Cyrillic (3), or Isovec (4) |
| <i>Character Set</i>    | CS | <num> | Character set, only applies to Isoarc and Isovec (see below)             |
| <i>Océ plotter type</i> | TY | <str> | Plotter identification string (10 chars maximum).                        |

---

## Arguments

**DF** The format of the data that will follow, either BGL (DF=0), or VDF (DF=1).

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).



[20] Océ plot origin

**ST** Step Size, the unit for the coordinate system in microns, either 12.5, 25, 50, or 100 microns.

**FN** Font number, either the primary (1), or the secondary (2) font. This parameter is mandatory in the sense that whenever font type FT and/or character set CH are present, you must specify the font to modify.

**FT** Font type for the specified font: DIN17, LEROY, CYRILLIC, ISOARC or ISOVEC.

**CH** Character set. Only applies to the ISOARC and ISOVEC fonts, for which the following character sets are available:

- ISOARC: 20, 25, 29, 50 to 59, and 80
- ISOVEC: 0, 5, 9, 30 to 39, and 60

If you specify this parameter, you must specify font number FN and font type FT as well.

**TY** Plotter identification string, 10 characters maximum. This string is returned when BGL's IC-11 (Inquire device identification, 0x2B in VDF) or RI (Return Identification, 0x28 in VDF) command is received.

---

## Examples

The following command states that the input language will be BGL, step size 50 micron, origin in lower-left corner, and primary font set to LEROY:

```
APPLDATA 4 "DF=0, OR=0, ST=50, FN=1, FT=2";
```

---

## Notes

This command has to be used twice in order to define both fonts, i.e.

```
APPLDATA 4 "FN=1, FT=0, CH=20, FN=2, FT=4, CH=5";
```

does not work.

Instead, use the following two commands:

```
APPLDATA 4 "FN=1, FT=0, CH=20";  
APPLDATA 4 "FN=2, FT=4, CH=5";
```

There are no mandatory parameters, APPLDATA 4 switches to Océ emulation even when no parameters are given.

---

# APPLDATA 005 HP emulation

(RCF 1 only)

---

## Description

This command is used to select either HP-GL or HP-GL/2, and to specify some related parameters.

**Note:** *This command is replaced with the APPLDATA 50 (HP-GL) and APPLDATA 51 (HP-GL/2).*

---

## Syntax

APPLDATA 005 "TY=HP plotter type, OR=Origin, MO=Mode, SP=SP0 end of file, DF=Data format";

| <b>parameter</b>       |    | Type  | Meaning  |
|------------------------|----|-------|--|
| <i>Plotter type</i>    | TY | <num> | Type of emulated HP plotter, see below.                              |
| <i>Origin</i>          | OR | <num> | Plot origin, LL (0), LR (1), UL (2), UR (3), Center (4), or Auto (5) |
| <i>Mode</i>            | MO | <num> | Emulate (0), or normal (1), see below.                               |
| <i>SP0 end of file</i> | SP | <num> | Pen 0 indicates end of file, yes (0), or no (1).                     |
| <i>Data format</i>     | DF | <num> | Plot language, HP-GL (0) or HP-GL/2 (1).                             |

---

## Arguments

**TY** The type (model number) of plotter that should be emulated. This is used for HP-GL's OI (Output Identification) command, and for the automatic origin mode (see below).

| Type | Model    | Automatic origin | Type | Model     | Automatic origin |
|------|----------|------------------|------|-----------|------------------|
| 0    | HP-7440  | Lower right      | 6    | HP-7585B  | Center           |
| 1    | HP-7475A | Lower right      | 7    | HP-7586B  | Center           |
| 2    | HP-7550A | Lower right      | 8    | HP-7595A  | Center           |
| 3    | HP-7570A | Center           | 9    | HP-7596A  | Center           |
| 4    | HP-7580A | Center           | 10   | HP-7600   | Lower right      |
| 5    | HP-7580B | Center           | 11   | DesignJet | Lower left       |

[21] HP plotter types

**OR** The origin of the plot, Lower Left (0), Lower Right (1), Upper Left (2), Upper Right (3), Center (4), or Auto (5). In auto-mode, the origin is derived from the default origin of the emulated plotter.

**MO** Emulation mode. If set, the following HP-GL instructions are modified to be compatible with the HP-9872 plotter:

DF      Set to Defaults  
DR      Direction relative  
IN      Initialise plotter  
IW      Input window  
OC      Output commanded pen status  
OD      Output Digitised point and pen status  
OP      Output P1 and P2 points  
SI      absolute character size  
SR      Relative character Size  
UC      User defined Character

**SP** If enabled, the selection of pen 0 is interpreted as the end of file EOF. There is no pen#0 in HP-GL, and some HP-GL files use the SP0 command to indicate that the plot is finished. If disabled, pen0 is interpreted as a 2 or 3 pixels wide pen. (Depending on the plotter used).

**Note:** *HP-GL/2 is able to use pen 0 as any other pen.*

**DF** Data format, either HP-GL (0) or HP-GL/2 (1).



---

## Examples

The next command will set the origin to lower left, and pen 0 as end of file:

```
APPLDATA 5 "OR=0, SP=0";
```

Use the following in order to use the origin of the DesignJet:

```
APPLDATA 5 "TY=11, OR=5";
```

---

## Notes

There are no mandatory parameters, APPLDATA5 switches to HP emulation even when no parameters are given.

The automatic origin (OR=auto) is not implemented on all machines.

---

# APPLDATA 006 CalComp emulation

(RCF 1 only)

---

## Description

This command is used to select the CalComp emulation, and to define the parameters for the CalComp 906/907 languages.

**Note:** *Since RCF 2.0, This command has been replaced with appldata 58.*

---

## Syntax

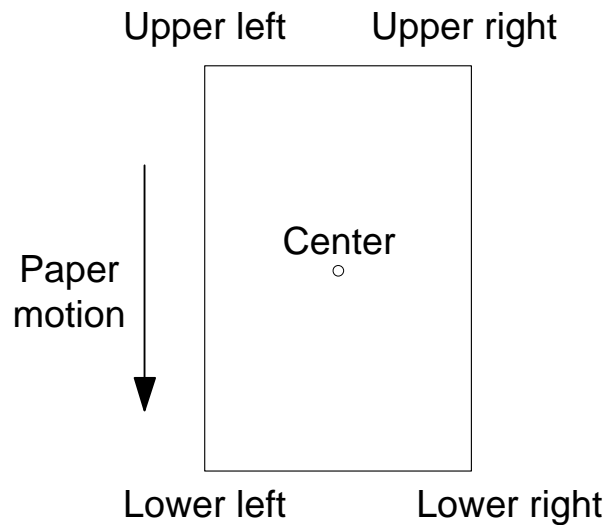
**APPLDATA 006** "OR=Origin, ST=Step, CK=Checksum, EM=End of message, SY=Sync code, DB=Double sync";

| <b>parameter</b>      |    | <i>Type</i> | <i>Meaning</i>  |
|-----------------------|----|-------------|---|
| <i>Origin</i>         | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), or Center (4)          |
| <i>Step</i>           | ST | <num>       | Steps/inch. Either 100, 200, 400, 500, 1016, 2032, or 4064          |
| <i>Checksum</i>       | CK | <num>       | Checksum yes (0), or no (1)   |
| <i>End of message</i> | EM | <num>       | Character flagging the end of the data sequence, (0 to 30)          |
| <i>Sync code</i>      | SY | <num>       | Character flagging the beginning of a block of plot data, (0 to 63) |
| <i>Double sync</i>    | DB | <num>       | Double sync yes (0), or no (1)                                      |

---

## Arguments

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).



[22] Plot origin options

**ST** Number of steps per inch, should correspond to the resolution of the plot.

**CK** Enables or disables the checksum mechanism.

**EM** Character code for the end-of-message byte, indicating the end of a data sequence.

**SY** Character code for the sync byte, indicating the beginning of the plot data.

**DB** Enables or disables the double sync. That is, whether or not the byte which begins the plot data is sent twice.

---

## Examples

The following command will set origin lower-right, step to 2032 steps/inch, sync byte to 0, and eom byte to 30 (decimal):

```
APPLDATA 6 "OR=1, ST=2032, SY=0, EM=30";
```

---

# APPLDATA 007 Erase disk

---

## Description

This command erases all plot data from the plotter's internal hard disk, both plot file(s) and template(s). The user defaults and factory defaults are preserved.

This command is also known as "Data Security".

---

## Syntax

```
APPLDATA 007 "";
```

---

## Arguments

None.

---

## Examples

The next command will erase all information on the plotter's internal hard disk

```
APPLDATA 7 "";
```

---

# APPLDATA 008 Template and Merge

(RCF 1.0. ME was added in RCF 2.0, MM was added in RCF 2.4)

---

## Description

This command controls the creation and use of template files and the merging of plots. A template is a file that is stored in the plotter for future reference, while merging actually overlays consecutive files.

There is currently only support for one template.

---

## Syntax

**APPLDATA 008** "ST=Status, ME=Merge, MM=Merge method";

| <b>parameter</b>    |    | <i>Type</i> | <i>Meaning</i>                                    |
|---------------------|----|-------------|---|
| <i>Status</i>       | ST | <num>       | Template disabled (0), enabled (1), or define (3) |
| <i>Merge</i>        | ME | <num>       | Merge mode off (0) or on (1)                      |
| <i>Merge method</i> | MM | <num>       | Overlay (0), Or (1), Exclusive Or (2), And (3)    |

---

## Arguments

**ST** This single parameter controls both the usage, as well as the definition of a template.

When the template is enabled (ST=1), the following plot (either vector or raster) will be merged with the template as stored inside the machine. Nothing happens if no template has been defined.

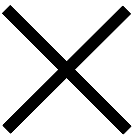

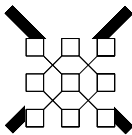


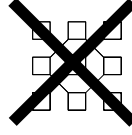


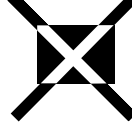
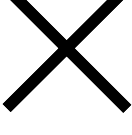


When ST is set to 3, the following plot will be stored as a template, the "erase disk" APPLDATA 07 can be used to remove it.

**ME** This setting determines if the following plots will be merged. The RCH of the basic plot to be merged must contain an ME=on (1), and all following plots will be merged, up to and including the plot that has an RCH containing ME=off (0). Default value for ME is off (0).

**MM** The way an overlay is merged with the basic plot (or the result of the preceding mergings). It may take one of the following values:

- 0 Overlay. Black or white pixels of the second plot replace those of the previous one. This is also called copy.
- 1 Or. Both plots are merged. Any black pixels in either the first plot or the second plot are printed.
- 2 XOR. An exclusive OR is made. Any black pixels in the first plot which coincide with pixels in the second plot are turned white. This allows reverse images (negatives) of plots.
- 3 And. Logical AND. Only pixels which are black in the first plot and which coincide with black pixels in the second plot are printed.

The following drawing summarizes the above description for each method. Plot A represents the basic plot (or the results of the preceding mergings) while plot B is the overlay (for which parameter MM is defined).

|              | Plot A  | Plot B  | Result  |
|--------------|---|---|---|
| Overlay      |   |   |   |
| Merge (OR)   |  |  |  |
| Exclusive OR |  |  |  |
| AND          |  |  |  |

[23] Merge and overlay

Default value is OR.

This parameter is added in RCF 2.4.

## Examples

(1) Plot 2, plot 3 and plot 4 will be merged with the HP-GL file of plot 1. The BGL file plot 2 will first be merged using the or method, then the CalComp file plot 3 will be merged with the xor method and finally the CALS file plot 2 is copied (overlaid) (MM=0) onto the whole bitmap:

```
BEGMF "RCH file";  
...  
% Merge ON %  
APPLDATA 8"ME=1";  
...  
ENDMF;
```

*PLOT file 1*  
HP-GL DATA

```
BEGMF "RCH file";  
...  
% Overlay file%  
APPLDATA 8"ME=1, MM=1";  
...  
ENDMF;
```

*PLOT file 2*  
BGL DATA

```
BEGMF "RCH file";  
...  
% Overlay file%  
APPLDATA 8"ME=1, MM=2";  
...  
ENDMF;
```

*PLOT file 3*  
CalComp DATA

```
BEGMF "RCH file";  
...  
% Last overlay file%  
APPLDATA 8"ME=0, MM=0";  
...  
ENDMF;
```

*PLOT file 4*  
CALS DATA

[24] Example of merged files

(2) Store next plot as template:

```
APPLDATA 8 "ST=3";
```

Merge next plot with template:

```
APPLDATA 8 "ST=1";
```

---

## Notes

Only vector files can be used as templates. Scaling and rotation are applied before the template is stored.

Merging can be done with any type of plot. That is, raster and vector plots can be merged.

The size of a merged plot is determined by the basic plot. If a following plot is larger, it is clipped.

The merge method MM parameter is ignored for basic files.

The status parameter (ST) is ignored when the merge parameter (ME) is set to on (1).



---

# APPLDATA 009 User patterns

(RCF 1 only)

---

## Description

This command is used to define the eight available user patterns.

---

## Syntax

**APPLDATA 009** "ID=Index, PA=Pattern";

| <b>parameter</b> |    | Type  | Meaning  |
|------------------|----|-------|--|
| <i>Index</i>     | ID | <num> | Number of the user pattern that is about to be defined (1 to 8)      |
| <i>Pattern</i>   | PA | <num> | A sequence of 1024 0's and 1's, defining a 32x32 monochrome pattern. |

---

## Arguments

**ID** The number of the user pattern that is going to be defined. Note that user patterns 1 to 8 are selected as pen pattern 33 to 40.

**PA** A sequence of exactly 1024 pixel data elements, each with a value of 1 or 0, defining a 32x32 bit pattern, the digits all separated from each other by white space (That is, one or more occurrences of htab, space, cr, lf, vtab, and/or formfeed).

---

## Examples

The following command defines user pattern 3:

```
APPLDATA 9 "ID=3, PA=
1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0
1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0
1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0
1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0
```

```

00001111000011110000111100001111
00001111000011110000111100001111
00001111000011110000111100001111
00001111000011110000111100001111
...< 16lines left out >...
11110000111100001111000011110000
11110000111100001111000011110000
11110000111100001111000011110000
11110000111100001111000011110000
00001111000011110000111100001111
00001111000011110000111100001111
00001111000011110000111100001111
00001111000011110000111100001111";

```

---

## Notes

A number of bits less than or greater than 1024, or digits other than 0 and 1 are considered to be an error, causing the pattern definition to be rejected.

The only machines that support this apldata are the Océ G9000-C and Océp9500-C series (ME 2.x).

---

# APPLDATA 010 Reset defaults

---

## Description

This command manipulates the machine's contexts.

---

## Syntax

**APPLDATA 010** "RD=Reset defaults";

| <b>parameter</b>      |    | <i>Type</i> | <i>Meaning</i>   |
|-----------------------|----|-------------|--|
| <i>Reset defaults</i> | RD | <num>       | Load factory defaults (0), load default context (1), replace default context (2), or temp user (3) |

---

## Arguments

**RD** The load factory and load user commands can be used to reinitialise the current context, it will be replaced by the factory defaults (RD=0), or the default context (RD=1) respectively.

The factory defaults are always present and cannot be modified. However, the user can create a custom setup by defining a so-called default context. This is done by sending an RCH and storing the resulting context as the default context by setting RD=2.

By default, each job starts with a context equal to the user defaults, since this context has been restored automatically at the end of the previous job. The temp user setting can be used to disable this mechanism, causing the context to remain in effect for multiple jobs, until a new RCH is received with an RD other than 3. The temp user flag is not reset automatically, it is by default off.

---

## Examples

The next command will activate the "temp user" feature. That is, the current set of attributes/parameters will remain active until another RCH is received:

APPLDATA 10 "RD=3";

---

## Notes

The "load default" and "replace default" commands are executed immediately, so any preceding settings are lost on the "load default context", while following APPLDATA commands will not be part of the new default context on a "replace default context" command.

The temp user feature must be disabled explicitly by sending an RCH containing an RD other than 3.

The temp user should really be a job-attribute, while the others (load factory defaults, load default context and replace default context) are actions.

---

# APPLDATA 011 CALS and TIFF

(RCF 1 only)

---

## Description

This command indicates that the following plot data should be treated as a CALS or TIFF file.

**Note:** *This command has been replaced by the APPLDATA 52 (CALS) and APPLDATA 55 (TIFF).*

---

## Syntax

**APPLDATA 011** "SC=Scale";

| <hr/> <b>parameter</b> |    | Type  | Meaning  |
|------------------------|----|-------|--|
| Scale                  | SC | <num> | Convert (0), autoscale (1), autoscale if clipped (2) |

---

## Arguments

**SC** This parameter controls the scaling of the image. SC=0 means that a resolution conversion takes place. That is, the image is scaled to its proper size with respect to the source resolution.

Setting SC=1 will always scale the image to the paper size.

SC=2 will only scale the image to the papersize in case it would be clipped.

**Note:** *The controller may autorotate the rasterfile before it autoscales. Autorotate is always on, and takes place when the image's width is larger than its height and its width exceeds the width of the printable area.*

---

## Example

This command switches to CALS/TIFF interpretation and enables autoscale:

APPLDATA 11 "SC=1";

# APPLDATA 012 Copy configuration

(RCF 2.0)

## Description

This command specifies how the controller should handle the number of copies requested in the RCF header and in the plot file.

## Syntax

APPLDATA 012 "CC=Copy configuration";

| <b>parameter</b>   |    | Type  | Meaning   |
|--------------------|----|-------|---|
| <i>Copy config</i> | CC | <num> | Ignore copies in plotfile (0), maximum of context or plotfile (1), context x plotfile (2), ignore context (3) |

## Arguments

- CC** The number of copies as specified in the plotfile:
- 0 The number of copies as specified in the plotfile is ignored. Only the number of copies requested in the context (RCF header) is taken into account. Refer to See ‘Session and context’ on page 18 for further explanation.
  - 1 The number of copies is the maximum of the context (RCF header) or the plotfile.
  - 2 The total number of copies printed is the number of copies specified in the context (RCF header) multiplied by the number of copies as requested in the plotfile.
  - 3 Ignore context means that the number of copies to print is taken from the plotfile only.
- The default for this parameter is 3, plotfile only.

---

## Examples

The following command makes sure that the RCH specifies the copies, the number of copies in the plotfile is ignored:

```
APPLDATA 12 "CC=0";
```

---

## Notes

If there are no copies requested in the RCH, the machine's default value will be used, as usual.

---

# APPLDATA 013 Roll selection

---

## Description

This command has been integrated in ‘APPLDATA 021 Media selection’ on page 77.

(Appldata 013 was proposed in versions 2.0 and 2.1 of the RCF specification, but never had an official status.)



---

# APPLDATA 014 Print quality

(RCF 2.1. The presentation and ink saver modes are added in RCF 2.2.  
PM is added in RCF 2.4.)

---

## Description

This command is used to select the print quality.

---

## Syntax

APPLDATA 014 "QU=Quality, PM=Poster mode";

| <b>parameter</b>   |    | <i>Type</i> | <i>Meaning</i>   |
|--------------------|----|-------------|--|
| <i>Quality</i>     | QU | <num>       | Draft (0), Normal (1), High (2), Enhanced (3), Presentation (4), or Ink saver (5). |
| <i>Poster mode</i> | PM | <num>       | Disabled (0), or Enabled (1).  |

---

## Arguments

**QU** This parameter is specifies the print quality. (Applies to Océ 5120 and 5200 ink jet printers).

**PM** This parameter enables the poster mode, in order to improve the darkness of large areas of black. (Applies to Océ 9400 printer).

---

## Examples

(1) Select enhanced quality mode:

APPLDATA 14 "QU=3";

(2) Enable poster mode:

APPLDATA 14 "PM=1";

---

# APPLDATA 015 Color attributes

(RCF 2.1)

---

## Description

This command is used to configure the color rendering mode. This includes the dithering method and color mixing.

---

## Syntax

APPLDATA 015 "DM=Dither method, MX=Mixture, CM=Color mode";

| <b>parameter</b>     |    | <i>Type</i> | <i>Meaning</i>                                     |
|----------------------|----|-------------|--|
| <i>Dither method</i> | DM | <num>       | Blue noise mask (0), Bayer's mask (1), Cluster (2) |
| <i>Mixture</i>       | MX | <num>       | Overlay mode (0), or mixture mode (1)              |
| <i>Color mode</i>    | CM | <num>       | Monochrome (0), or color (1)                       |

---

## Arguments

**DM** This parameter is used to select the dithering method. It can either be "Blue noise mask" (0), "Bayer's mask" (1) or "Cluster" (2).

**MX** This parameter describes how to process the intersection of two objects, you can either mix the two colors, or overlay the first with the second.

**CM** This parameter can be used to define the print mode of a color plotter. The color mode parameter is introduced in RCF 2.2.

**Note:** For a correct setup of pens on the 5100C, the command *APPLDATA015* color mode must be sent before the pen attributes command *APPLDATA001*.

---

## Example

Use the blue noise mask, and overlay the intersections:

APPLDATA 15 "DM=0, MX=0";

---

# APPLDATA 020 Stamp

(RCF 2.0)

---

## Description

This command defines if a printer stamp must be placed on the plot, and if so, which one and where. The stamp is selected from a list of predefined stamps, which are defined using the printer's control panel.

---

## Syntax

APPLDATA 020 "SS=Stamp selection, SN=String number, PO=Position, FS=Font size, GS=Gray scale";

| <b>parameter</b>       |    | <i>Type</i> | <i>Meaning</i>   |
|------------------------|----|-------------|--|
| <i>Stamp selection</i> | SS | <num>       | Stamping is enabled (1), or disabled (0)                             |
| <i>String number</i>   | SN | <num>       | Number of predefined string, from 1 to 50                            |
| <i>Position</i>        | PO | <num>       | Predefined stamp position, either bottom (0), middle (1), or top (2) |
| <i>Font size</i>       | FS | <num>       | Predefined font, either small (0) or large (1)                       |
| <i>Gray scale</i>      | GS | <num>       | Predefined gray scale choice: 0, 1, 2, or 3                          |

---

## Arguments

**SS** This parameter indicates if stamping is active (1) or not (0).

**SN** Selects the string that will be used as stamp. There are 50 stamps available, which are defined on the printer's control panel.

**PO** Selects the position for the stamp on the plot, either at the bottom (0), in the middle (1), or at the top (2) of the title block of the drawing. See also 'APPLDATA 022 Finishing' on page 82.

**FS** Stamp font size, either small (0) or large (1).

**GS** Stamp gray scale, either black (0), dark gray (1), gray (2), or light gray (3).

---

## Example

Put stamp number 10 in the middle, using a large font in gray.

```
APPLDATA 020 "SS=1, SN=10, PO=1, FS=1, GS=3";
```

---

# APPLDATA 021 Media selection

(RCF 2.0. RN has been added in RCF 2.2. RS has been added in RCF 2.4.  
TR has been added in RCF 2.5)

---

## Description

This command selects the size and type of the media on which the plot will be printed. Some of the parameters of the command are used for the scaling of overlays.

---

## Syntax

APPLDATA 021 "PF=Paper format, ME=Media, AF=Auto format,  
BY=Bypass, RM=Roll overruling method, RN=Roll number, RS=Roll and  
tray selection, TR=Tray number";

| <b>parameter</b>               |    | <i>Type</i> | <i>Meaning</i>   |
|--------------------------------|----|-------------|--|
| <i>Paper format</i>            | PF | <num>       | Format of paper to use, A0, B1, A, A+, etc.  |
| <i>Media</i>                   | ME | <num>       | Type of media, paper (0), transparent (1), or polyester (2)                        |
| <i>Auto format</i>             | AF | <num>       | Automatic format selection, enabled (1) or disabled (0)                            |
| <i>Bypass</i>                  | BY | <num>       | Manual feed enabled (1) or disabled (0)  |
| <i>Roll overruling method</i>  | RM | <num>       | Use exact fit (0), use next larger (1), or use next larger, then next smaller (2). |
| <i>Roll number</i>             | RN | <num>       | The number of the roll to use.   |
| <i>Roll and tray selection</i> | RS | <num>       | Manual (0) or automatic (1)  |
| <i>Tray number</i>             | TR | <num>       | The number of the paper tray to use.   |

## Arguments

**PF** The size of the paper on which the drawing must be printed:

| Number | Size                          | Width x Height (mm) |
|--------|-------------------------------|---------------------|
| 0      | Metric ISO A0                 | 841 x 1189          |
| 1      | Metric ISO A1                 | 594 x 841           |
| 2      | Metric ISO A2                 | 420 x 594           |
| 3      | Metric ISO A3                 | 297 x 420           |
| 4      | Metric ISO A4                 | 210 x 297           |
| 5      | US Standard small E (34x44")  | 863.6 x 1117.6      |
| 6      | US Standard small D (22x34")  | 558.8 x 863.6       |
| 7      | US Standard small C (17x22")  | 431.8 x 558.8       |
| 8      | US Standard small B (11x17")  | 279.4 x 431.8       |
| 9      | US Standard small A (8.5x11") | 215.9 x 279.4       |
| 10     | US std large E+ (36 x 48")    | 914.4 x 1219        |
| 11     | US std large D+ (24 x 36")    | 606.9 x 914.4       |
| 12     | US std large C+ (18 x 24")    | 457.2 x 606.9       |
| 13     | US std large B+ (12 x 18")    | 304.8 x 457.2       |
| 14     | US std large A+ (9 x 12")     | 228.6 x 304.8       |
| 15     | Metric ISO B1 (707 mm)        | 707 x 1000          |
| 16     | Metric ISO B2                 | 500 x 707           |
| 17     | Metric ISO B3                 | 353 x 500           |
| 18     | Metric ISO B4                 | 250 x 353           |
| 19     | 30 inch                       | -                   |
| 20     | 500 mm                        | -                   |
| 21     | 700 mm                        | -                   |
| 22     | Japanese B1                   | 728 x 1030          |
| 23     | Japanese B2                   | 515 x 728           |
| 24     | Japanese B3                   | 364 x 515           |
| 25     | Japanese B4                   | 257 x 364           |
| 26     | Japanese B5                   | 182 x 257           |
| 27     | Metric ISO A5                 | 148 x 210           |
| 28     | Postcard                      | 100 x 148           |
| 29     | Legal                         | 215.9 x 355.6       |
| 30     | Executive                     | 190.5 x 254         |

[25] Paper formats table

For some machines, PF only specifies the size of the image to be output. Others may also use this for roll or tray selection. That is, print an A1 plot on A1-sized paper. For the Océ 9400, PF is used as the format size required for autoscale. (See AS=Autoscale on page 47).

**Overlays** Gives the size of the bitmap to which the overlay is scaled when AS=Scale to format in APPLDATA 3 is specified (See 'APPLDATA 003 Transformations' on page 47).

**ME** This is the media selection: paper (0), transparent (1), or polyester (2).

**AF** Autoformat is used to select a paper format automatically. It will select a standard format on which the drawing will fit without loss of information. Whether this only takes into account the available paper, or either DIN and/or ANSI sizes is controller dependent.

**BY** Bypass means that manual feed will be used. The operator will be asked to mount the correct format in the manual feed.

**RM** The roll overruling method describes how the plot will be printed given the available rolls. This parameter is defined to prevent the printer stopping to ask for the requested paper format to be loaded. The following possibilities are available:

**Exact fit** If the required format and media type matches one of the installed roll widths, the job is printed immediately without further notice. Otherwise, a message is displayed on the printer's control panel and the printer waits for the appropriate media to be loaded by the operator.

**Next larger** Look for the requested format and media type. If it is not present, print it on the next larger available paper (the plot scale is not changed). If there is none, or not of the same media type, a message is displayed on the printer's control panel and the printer waits for the appropriate media to be loaded by the operator. (Not applicable to the Océ 9600).

**Next larger, then next smaller** The printer looks for the requested format and media type. If it is not present, the printer tries to select a larger roll to print the job. If a larger roll is unavailable, the job is scaled down and printed on the next smaller available media. If there is none, or not of the same media type, a message is displayed on the printer's control panel and the printer waits for the appropriate media to be loaded by the operator.

**RN** Selects the roll to be used for this job. Note that a printer may either select the roll based on the requested paper format and media type, or using this RN parameter.

**RS** If RS>manual (0), the media source can be selected manually using either the roll number defined in RN or the tray number defined in TR. If RS=automatic (1), the media source is selected automatically. Whether trays

or rolls are preferred when automatic selection is chosen, is machine dependent. This parameter was added in RCF 2.4 and extended in RCF 2.5.

**TR** Selects the paper tray to be used for this job. This parameter has been added in RCF2.5.

---

## Examples

Print on transparent A1, choose next larger if not available:

APPLDATA 021 "PF=1, ME=1, AF=0, RM =1";

Select media source automatically:

APPLDATA 021 "RS=1";

Print on roll number 2:

APPLDATA 021 "RS=0, RN=2";

Scale the overlay to A3 size:

APPLDATA 003 "AS=1";

APPLDATA 021 "PF=3";



---

## Notes

RN and TR are mutually exclusive: in case the user specifies both in the same RCF, the fallback behaviour is machine dependent.

The way the media source is selected, when automatic mode is chosen (RS = 1) is machine dependent. For example, on an Océ 9400, the drawing will be autopositioned and the roll selected automatically, to optimize media use.

Manual feed (Bypass BY=1) overrides any roll or tray selection using RN or TR or automatic media selection.

If both auto scale (APPLDATA 3) and auto format are defined, the original-to-copy matrix is used, See 'APPLDATA 026 Original to copy matrix' on page 92.

Asking for autoroll on a machine that has only one roll is the same as sending RN=1. The same applies to tray selection.

**Overlays** Paper format PF is the only parameter available for overlays. It is used in conjunction with the AS Autoscale parameter in 'APPLDATA 003 Transformations' on page 47.

---

## Notes for 9400

If RN roll number is specified, the automatic roll selection is ignored.

Autoroll and AS=Autoscale to best fit (in APPLDATA 3) are incompatible.

If Autoroll is selected, the jobs inside the media saver will be flushed (that is, BY=accumulate in APPLDATA 2 is deactivated).

The RS roll selection command is ignored if roll number(RN) or bypass (BY) is specified.

# APPLDATA 022 Finishing

(RCF 2.0. The first fold parameter and the fold and reinforce parameter are added in RCF 2.4.)

## Description

This command activates folding, reinforcing and punching, and the fold method.

## Syntax

APPLDATA 022 "FO=Fold options, ME=Fold method, LE=Length, WI=Width, BE=Binding edge, FR=Fold orientation";

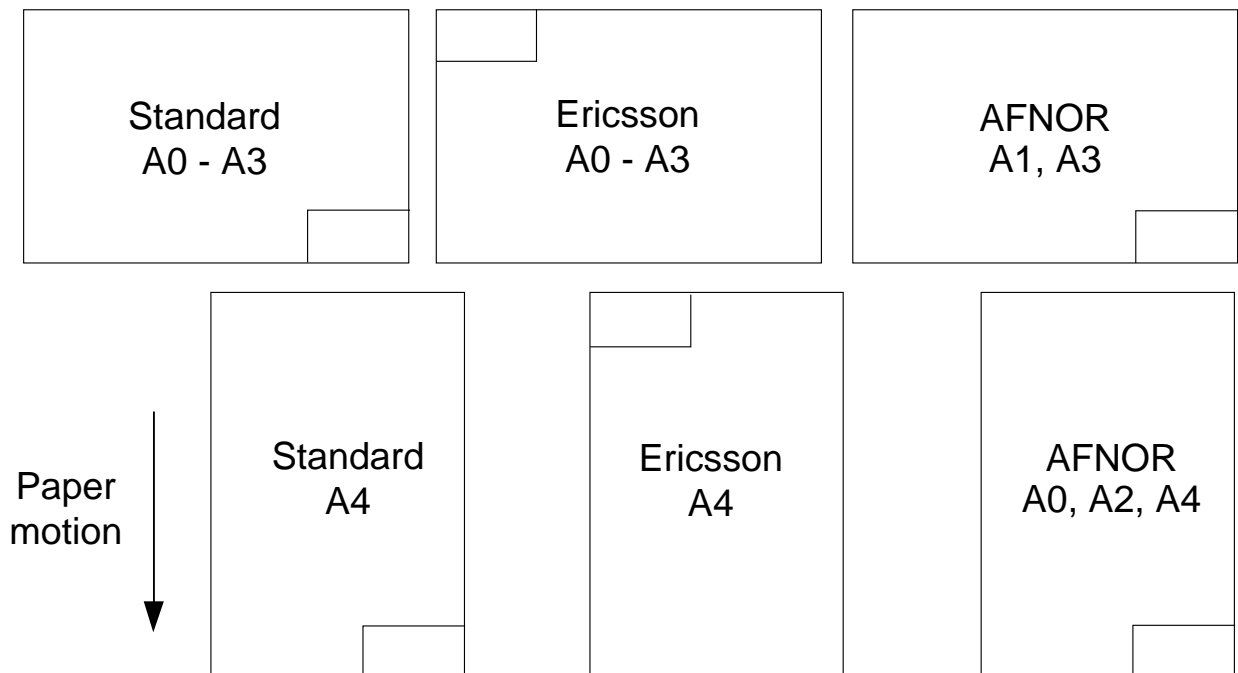
| <b>parameter</b>        |    | <i>Type</i> | <i>Meaning</i>   |
|-------------------------|----|-------------|--|
| <i>Fold options</i>     | FO | <num>       | Fold off (0), fold on (1), fold and punch (2), first fold only (3), fold and reinforce (4) |
| <i>Fold method</i>      | ME | <num>       | Standard (0), Ericsson (1), or AFNOR (2)   |
| <i>Length</i>           | LE | <fxp>       | Fold packet length, must be between 276mm (10.9") and 310mm (12.2")                        |
| <i>Width</i>            | WI | <fxp>       | Fold packet width, must be between 186mm (7.3") and 230mm (9")                             |
| <i>Binding edge</i>     | BE | <fxp>       | None (0), or a value in the range 15mm (0.6") to 30mm (1.2")                               |
| <i>Fold orientation</i> | FR | <num>       | Either automatic (0), or portrait (1)  |

## Arguments

**FO** Selects a combination of the fold and punch or reinforce options, or choose the first fold only.

**Note:** *The Océ 9600 has no punch option. Pre-punched paper is used, if required.*

**ME** Selects the fold method to use, which is related to the position of the title block. The 'Standard' folding method is the same as the DIN, ANSI, and Architectural methods



[26] Possible folding methods

**Note:** When the folding method is set to Ericson, Punching is not supported.

**LE** Fold packet length in mm or in inches, must be between 276mm (10.9") and 310mm (12.2").

**WI** Fold packet width in mm or in inches, must be between 186mm (7.3") and 230mm (9").

**BE** The holes are punched in the binding edge. Choose 0 when no binding edge should be added, or a value in the range 15mm to 30mm.

**FR** The fold orientation decides of the fold will be in portrait (1), or detected automatically by the machine (0).

---

## Example

Select folding using the Ericsson method. The packet must be 300 mm long and 200 mm wide, no binding edge.

APPLDATA 022 "FO=1, ME=1, LE=300, WI=200, BE=0";

---

## Notes

If there is a conflict, the fold selection overrides the delivery settings. The following table indicates the different available deposit options and their corresponding RCF command, according to the fold option FO parameter.

| <b>Fold option FO<br/>in APPLDATA 022</b>                | <b>Deposit in</b>   | <b>Deposit DE and<br/>Output OU<br/>in APPLDATA 023</b>                        |
|--|---|--|
| FO=0 (Fold off)  | Delivery tray<br>Long copy escape<br>Stackwise<br>Set per bin<br>Job per bin<br>Bin selection | OU=0<br>OU=1<br>OU=0, DE=4<br>OU=0, DE=5<br>OU=0, DE=6<br>OU=0, DE=7, BN=1...6 |
| FO=1, 2 or 4 (Fold On, Fold & punch or Fold & reinforce) | Stacker<br>Belt1<br>Belt2<br>Either belt  | OU=1, DE=0<br>OU=1, DE=1<br>OU=1, DE=2<br>OU=1, DE=3                           |
| FO=3   | First fold output tray  | OU=1   |

[27] Fold, Deposit and Output options

### Conflict cases

If FO=1 and DE=5, for instance, then FO overrides the deposit selection and plots will be deposited in the stacker, after they are folded.

If FO=0 and DE=0, then unfolded plots will go to the delivery tray or the high capacity stacker (OU=1).

---

# APPLDATA 023 Delivery

(RCF 2.0. The OU, BN and JO parameters, and DE=4 to 7, are new in RCF 2.3)

---

## Description

This command defines how the printer handles the current plot, how it is cut, and where it should be delivered.

---

## Syntax

APPLDATA 023 "DE=Deposit, CI=Cut information, CL=Cut length, OU=Output, BN=Bin number, JO=Jogging";

| <b>parameter</b>       |    | <i>Type</i> | <i>Meaning</i>   |
|------------------------|----|-------------|--|
| <i>Deposit</i>         | DE | <num>       | Deposit the folded plot in the stacker (0), on belt 1 (1), belt 2 (2), or on either belt (3).<br>Deposit the non-folded plots stackwise (4), a set per bin (5), a job per bin (6), or in a selected bin (7). |
| <i>Cut information</i> | CI | <num>       | Cut on the size of the plot (0), on the standard size (1), or use a custom size (2)  |
| <i>Cut length</i>      | CL | <fxp>       | Custom cut length, must be in the range 210 to 15000 mm, or 8.5 to 600.0 inch.   |
| <i>Output</i>          | OU | <num>       | Select output device: horizontal (0), other (1), or auto (2).  |
| <i>Bin number</i>      | BN | <num>       | Bin number in the high capacity stacker (1 to 6).  |
| <i>Jogging</i>         | JO | <num>       | Disable (0) or enable (1) the jogging.   |

---

## Arguments

**DE** This indicates where the folded plot must be deposited:

- 0 On the stacker
- 1 On belt 1
- 2 On belt 2
- 3 On either belt, depending on which one is full and which one is not.

Non-folded plots can be deposited either in the high capacity stacker which can be configured in the following ways:

- 4 Stackwise: All plots will be delivered in bin 1. If the bin is full, the machine switches to the next bin.
- 5 Set per bin: All plots belonging to a set are delivered in the bin. A new set will be delivered in the next bin.
- 6 Job per bin: Deliver all plots belonging to the job in the bin. A new job will be delivered in the next bin. If it is full, the machine stops.
- 7 Bin selection: All plots will be delivered in the bin indicated by the bin number parameter. The machine stops when the bin is full.

**Note:** *The DE parameter options 4 to 7 do not apply to the Océ 9600 because it has no high capacity stacker.*

**CI** Defines how plots are cut:

- 0 Exactly the length of the plot. (Also called Synchro cut).
- 1 Using the standard format on which the plot is printed.
- 2 Custom cut length.

**Note:** *The Océ 9400 accepts only 0 and 1 for the CI parameter.*

**CL** Specifies the custom cut length. It can be specified either in millimeters or in inches, depending on the Units setting in the RCF header. (See the note in MFDESC on page 10).

**Note:** *Although the 15000 is technically illegal (as far as the <fxp> definition is concerned), in this particular case 5 digits are accepted before the point.*

**OU** This parameter is used to specify whether plots are sent to the horizontal receiving tray or another tray installed on the machine.

Currently, it is used to select the output device when Océ 9700/9800 optional output devices are installed, as well as to address output trays on the Océ 9600.

- 0 Selects the horizontal output device. That is, for the Océ 9700/9800, the high capacity stacker or copy delivery tray. For the Océ 9600, it selects the horizontal receiving tray.
- 1 Selects the second output device. That is, for the Océ 9700/9800, the folder or the long copy escape. For the Océ 9600, the integrated receiving tray.
- 2 Automatic: Selects the correct output device depending on the plot characteristics. For example, the plot must go to the folder when folding is requested, while a long plot must be delivered to the long copy escape.

If no optional output devices are installed, the behaviour of OU = “other” is undefined.

**Note:** *If there is a conflict, the output parameter OU will be overruled by an APPLDATA 22 fold option FO (See ‘Fold, Deposit and Output options’ on page 84).*

**BN** Selects the bin number (1 to 6) in the high capacity stacker.

**JO** When jogging is enabled, the high capacity stacker will shift the output bin to separate the different plots or sets. (Also known as bin-shift).

---

## Examples

Cut on the size of the plot, and deposit it in the stacker.

APPLDATA 023 "DE=0, CI=0";

Deliver the plot in bin 3 of the sheet receiving unit.

APPLDATA 023 "OU=0, DE=7, BN=3";

---

## Notes

If there is a conflict between the deposit parameter DE and the fold option parameter FO of APPLDATA 22, the folding option FO of APPLDATA 22 will overrule the deposit selection.

The DE (Deposit), CL (Cut length), OU=Output), BN (Bin number) or JO (Jogging) options do not apply to the Océ 9400.

---

# APPLDATA 024 Edge correction

(RCF 2.0)

---

## Description

This command defines the leading and trailing edges which are added to or deleted from the current plot.

---

## Syntax

APPLDATA 024 "LA=Leading edge add, LR=Leading edge remove, TA=Trailing edge add, TR=Trailing edge remove";

| <b>parameter</b>            |    | <i>Type</i> | <i>Meaning</i>  |
|-----------------------------|----|-------------|---|
| <i>Leading edge Add</i>     | LA | <fxp>       | Amount of space to add to the leading edge, 0 to 100mm (4")       |
| <i>Leading edge Remove</i>  | LR | <fxp>       | Amount of space to remove from the leading edge, 0 to 100mm (4")  |
| <i>Trailing edge Add</i>    | TA | <fxp>       | Amount of space to add to the trailing edge, 0 to 100mm (4")      |
| <i>Trailing edge Remove</i> | TR | <fxp>       | Amount of space to remove from the trailing edge, 0 to 100mm (4") |

---

## Arguments

**LA** This adds a leading edge to the plot, may be specified in inches or mm, depending on the units setting in the RCF header. (See the note in MFDESC on page 10). This is done after the scale/zoom transform.

**Note:** The Océ 9400 accepts leading edge values up to 80 mm or 3 inch.

**LR** Removes a leading edge from the plot. may be specified in inches or mm, depending on the units setting in the RCF header. This is done before the scale/zoom transform.



**TA** Adds a trailing edge to the plot. may be specified in inches or mm, depending on the units setting in the RCF header. This is done after the scale/zoom transform.

**Note:** *The Océ 9400 accepts trailing edge values up to 3 inch or 80 mm.*

**TR** Removes a trailing edge from the plot. may be specified in inches or mm, depending on the units setting in the RCF header. This is done before the scale/zoom transform.

---

## Example

Add 1 mm to the leading edge, and remove 50mm from the trailing edge.

APPLDATA 024 "LA=1, TR=50";

---

## Notes

Please check the machine-specific documentation regarding the allowed ranges for the edge correction parameters.

Edge removal is done before the scale/zoom transform. Edge addition takes place after the scale/zoom transform.

Leading edge and Trailing edge are related to the plot as it comes out of the machine.

The LR (Leading edge remove) and TR (Trailing edge remove) options do not apply to the Océ 9400.

---

# APPLDATA 025 Framing

(RCF 2.0)

---

## Description

This command allows the user to ‘clip’ part of the plot. That is, delete either a border around a rectangle in the middle, or delete that middle rectangle while keeping the border.

---

## Syntax

APPLDATA 025 "FM=Framing mode, AX=Area X, AY=Area Y, AW=Area width, AH=Area height";

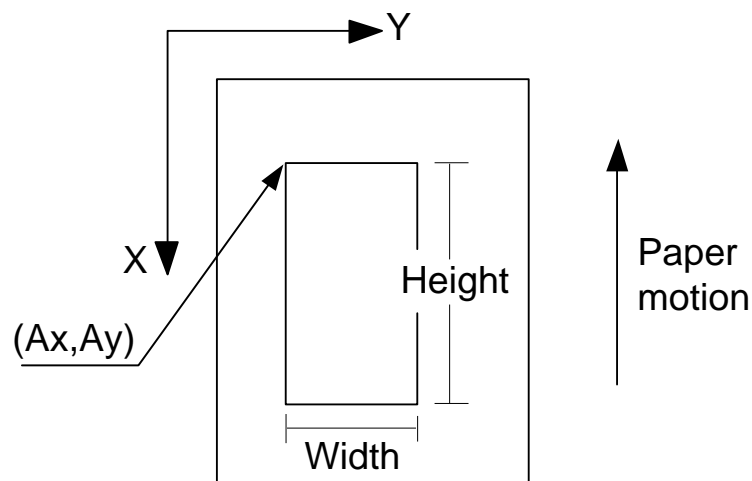
| <b>parameter</b>    |    | <i>Type</i> | <i>Meaning</i>  |
|---------------------|----|-------------|---|
| <i>Framing mode</i> | FM | <num>       | Either disabled (0), or delete the interior (1) or exterior (2) of the rectangle. |
| <i>Area X</i>       | AX | <fxp>       | X coordinate of the rectangle.<br>In the range 0 to 1219mm (48")                  |
| <i>Area Y</i>       | AY | <fxp>       | Y coordinate of the rectangle.<br>In the range 0 to 914mm (36")                   |
| <i>Area width</i>   | AW | <fxp>       | Width of the rectangle.<br>n the range 0 to 914mm (36")                           |
| <i>Area height</i>  | AH | <fxp>       | Height of the rectangle.<br>In the range 0 to 1219mm (48")                        |

---

## Arguments

**FM** This parameter defines if framing is disabled (0), or whether the interior (1) or the exterior (2) of the rectangle must be deleted.

**AX, AY, AW, AH** Define the two corners of the rectangle, (AX,AY) and (AX+AH, AY+AW). Values are taken to be inches or in mm's depending on the setting in the RCF header. See the machine-specific documentation regarding the allowed ranges for these parameters.



[28] Definition of the corners of the framing rectangle (AX, AY, AW, AH)

---

## Notes

The X axis corresponds to the feed axis, the Y axis corresponds to the cross-feed axis. There is no relation with the axis as used in the plot.

---

## Example

Keep only a rectangle somewhere near the middle of an A4 drawing:

```
APPLDATA 025 "FM=2, AX=130, AH=40, AY=90, AW=30";
```

# APPLDATA 026 Original to copy matrix

(RCF 2.0)

## Description

This command describes the original to copy matrix, which is used to select an output format that corresponds to the input format. It applies only when AutoScale and AutoFormat are both defined (see ‘APPLDATA 003 Transformations’ on page 47).

The matrix is defined using classes of formats S0 to S4:

|    | DIN                             | ANSI                   |
|----|---------------------------------|------------------------|
| S0 | A0, 36" (E+), 700mm, B1 (707mm) | 30", 34" (E), 36" (E+) |
| S1 | A1, 500mm                       | 22" (D), 24" (D+)      |
| S2 | A2                              | 17" (C), 18" (C+)      |
| S3 | A3                              | 11" (B), 12" (B+)      |
| S4 | A4                              | 8.5" (A), 9" (A+)      |

*Information required re B1, B2, B3, B4.*

## Syntax

APPLDATA 026 "S0=format, S1=format, S2=format, S3=format, S4=format";

| <b>parameter</b> |                    | Type  | Meaning   |
|------------------|--------------------|-------|---|
| Format           | S0, S1, S2, S3, S4 | <num> | Output format for the given input format, S0 (0) to S4 (4). |

---

## Arguments

**S0, S1, S2, S3, S4** These parameters are optional, and specify the output format that should be used for the given input format.

---

## Example

The following appldata defines the matrix as indicated below:

APPLDATA 026 "S0=1, S1=1, S2=3, S3=3, S4=3";

| Input format | Output format |    |    |    |    |
|--------------|---------------|----|----|----|----|
|              | S0            | S1 | S2 | S3 | S4 |
| <i>S0</i>    |               | •  |    |    |    |
| <i>S1</i>    |               | •  |    |    |    |
| <i>S2</i>    |               |    |    | •  |    |
| <i>S3</i>    |               |    |    | •  |    |
| <i>S4</i>    |               |    |    | •  |    |

---

## Notes

This matrix is only used when both auto format and auto scale are active.

# APPLDATA 027 Host requests

(RCF 2.0)

## Description

This command allows the host to activate the back-channel, and to request some information from the controller.

## Syntax

APPLDATA 027 "RT=Request type, SB=Set backchannel";

| <b>parameter</b>       |    | Type  | Meaning  |
|------------------------|----|-------|--|
| <i>Request type</i>    | RT | <num> | Type of request, either the machine-config (0), paper info (1), status info (2), controller config (3), stamp info (4) or accounting info (5). |
| <i>Set backchannel</i> | SB | <num> | Enable (1), or disable (0) the back-channel  |

## Arguments

**RT** The host can request one of the following:

- 0 Machine configuration. APPLDATA 100 will be returned to the host.
- 1 Paper information. APPLDATA 101 will be returned to the host.
- 2 Status information. APPLDATA 102 will be returned to the host.
- 3 Controller configuration. APPLDATA 105 will be returned to the host.
- 4 Stamping information. APPLDATA 108 will be returned to the host.
- 3 Accounting information. APPLDATA 103 and zero or more APPLDATA 107 will be returned to the host for each finished job which was not already sent to the plotter.

**SB** This parameter enables or disables communication over the channel on which this command has been received. This argument controls the unsolicited information only (APPLDATA 103/107), it does NOT influence the status and information requests sent from the host.

---

## Example

This request returns the paper information:

```
BEGMF "";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.0, Type=StatusRequest, Unit=Inches";  
APPLDATA 027 "RT=1";  
ENDMF;
```

---

## Notes

The Host request command only works for some controllers, and not necessarily on all interfaces.

The request must always be in a separate begin/end metafile-pair (BEGMF ... ENDMF) with the description type set to Status Request in the Metafile description (MFDESC).

See 'Backchannel messages' on page 129 for a more detailed description of the backchannel protocol.

---

# APPLDATA 028 Scan to file

(RCF 2.3)

---

## Description

This command is used to control the scan-to-file. It is only allowed in RCF headers of type "Scan to file".

---

## Syntax

APPLDATA 028 "CM=Command, TS=Transfer size, FF=File format, FO=File organisation, CP=Compression, OR=Orientation, RS=Resolution, SD=Size detection, PF=Paper format, CL=Custom length, CW=Custom width, AL=Auto length, QL=Quality, CK=Check plot, PA=Plot account ID, PU=Plot user ID, HS= Host scan active ID, HP=Host plot active ID, JI= Job ID, AI=Account ID, UI= User ID, TX=Text string";

| <b>parameter</b>         |    | <i>Type</i> | <i>Meaning</i>   |
|--------------------------|----|-------------|--|
| <i>Command</i>           | CM | <num>       | Enable scan mode (0), disable scan mode (1), abort scan job (2), start scan job (3), update settings (4), get scan status (5). |
| <i>Transfer size</i>     | TS | <num>       | Size of data blocks, in bytes.   |
| <i>File format</i>       | FF | <num>       | Format of the raster image: TIFF (0), or CALS (1)  |
| <i>File organisation</i> | FO | <num>       | Raw (0), tiled (1), or stripped (2).   |
| <i>Compression</i>       | CP | <num>       | Compression type: None (0), Group 4 (1), Group 3 1D (2), or Group 3 2D (3).  |
| <i>Orientation</i>       | OR | <num>       | Portrait (0), or landscape(1)  |
| <i>Resolution</i>        | RS | <num>       | 200, 300, or 400 dpi.  |
| <i>Size detection</i>    | SD | <num>       | Size of the raster image. Format is standard (0) - see PF, or custom (1) - see CL and CW.                                      |
| <i>Paper format</i>      | PF | <num>       | When Size Detection is "standard", the paper format indicates the image size. See table below.                                 |



| <b>parameter</b>           |    | <i>Type</i> | <i>Meaning</i>                             |
|----------------------------|----|-------------|--|
| <i>Custom length</i>       | CL | <fxp>       | Length of original in cm or inches.        |
| <i>Custom width</i>        | CW | <fxp>       | Width of original in cm or inches.         |
| <i>Auto length</i>         | AL | <num>       | Disabled (0), or enabled (1)               |
| <i>Quality</i>             | QL | <num>       | Superior (0), Normal (1)                   |
| <i>Check plot</i>          | CK | <num>       | Disabled (0), or Enabled (1)               |
| <i>Plot account ID</i>     | PA | <num>       | Host account identification of checkplots. |
| <i>Plot user ID</i>        | PU | <num>       | Host user identification of checkplots.    |
| <i>Host scan active ID</i> | HS | <num>       | Disabled (0), or enabled (1)               |
| <i>Host plot active ID</i> | HP | <num>       | Disabled (0), or enabled (1)               |
| <i>Job ID</i>              | JI | <num>       | Host job identification.                   |
| <i>Account ID</i>          | AI | <num>       | Host account identification of scans.      |
| <i>User ID</i>             | UI | <num>       | Host user identification of scans.         |
| <i>Text string</i>         | TX | <str>       | User string sent to scanner.               |

## Arguments

**CM** This parameter changes the printer controller's state.

- 0 Enable scan mode indicates that the host is ready to receive data, using the transfer size given by the TS parameter.  
**Note:** *The transfer size setting will remain un-changed until the scan mode is disabled.*
- 1 Disable scan mode will make the controller switch back to normal printing operation **after** all pending scans are uploaded.
- 2 Abort scan job will abort the scan job whose ID is given in the JI parameter.
- 3 Start scan job actually starts the scan. It must be accompanied by the JI parameter and optionally by the other parameters such as File Format, etc.
- 4 Update settings can be used to change the scan parameters of the scan job (specified by JI) once the scan mode is enabled.
- 5 Get scan status is used to ask the controller to send the status information back to the host computer, using the 'APPLDATA 106 Scanner info/data' on page 146.

**TS** The total size in bytes of the transfer data block as sent from the controller to the host. It must be a multiple of 512 bytes.

**RS.** The resolution of the image as it will be uploaded to the host.

**FF.** Defines the format of the image data sent by the controller. Supported formats are TIFF and CALS type 1.

**FO.** Indicates how the raster data is organized. Either as one contiguous block (raw), divided into tiles (tiled) or as several scanned lines in a strip (stripped).

**Note:** *The Océ 9400 only supports raw data.*

**CP.** The compression method to use. Choices are: none, Group 4, Group 3-1D or Group 3-2D.

**Note:** *The Océ 9400 only supports CP = none or Group 4.*

**SD** This parameter defined how the size of the scan is determined.

0 If set to Standard, a paper format and orientation must be specified.

1 If set to Custom, the custom length and custom width must be specified.

**PF** The format of the original(s) to be scanned:

| Number | Size                          | Width x Height (mm) |
|--------|-------------------------------|---------------------|
| 0      | Metric ISO A0                 | 841 x 1189          |
| 1      | Metric ISO A1                 | 594 x 841           |
| 2      | Metric ISO A2                 | 420 x 594           |
| 3      | Metric ISO A3                 | 297 x 420           |
| 4      | Metric ISO A4                 | 210 x 297           |
| 5      | US Standard small E (34x44")  | 863.6 x 1117.6      |
| 6      | US Standard small D (22x34")  | 558.8 x 863.6       |
| 7      | US Standard small C (17x22")  | 431.8 x 558.8       |
| 8      | US Standard small B (11x17")  | 279.4 x 431.8       |
| 9      | US Standard small A (8.5x11") | 215.9 x 279.4       |
| 10     | US std large E+ (36 x 48")    | 914.4 x 1219        |
| 11     | US std large D+ (24 x 36")    | 609.6 x 914.4       |
| 12     | US std large C+ (18 x 24")    | 457.2 x 609.6       |
| 13     | US std large B+ (12 x 18")    | 304.8 x 457.2       |
| 14     | US std large A+ (9 x 12")     | 228.6 x 304.8       |
| 15     | 30 inch                       | -                   |
| 16     | 500 mm                        | -                   |
| 17     | 700 mm                        | -                   |
| 18     | Metric ISO B1                 | 707 x 1000          |

[29] Scan formats table

**Note:** *The paper formats size list does not use the same numbers as a similar list in 'APPLDATA 021 Media selection' on page 77.*

**OT** Specifies the orientation of the scan, when the size detection is set to standard. That is, how the sheet will be put in the scanner.

**CL** Indicates the length of the original to be scanned, either in inches or cm, depending on the Units setting in the RCF header. (See the note in MFDESC on page 10). This parameter is only used when Size detection SD is set to custom.

**CW** Indicates the width of the original to be scanned, either in inches or cm, depending on the Units setting in the RCF header. This parameter is only used when SD is set to custom.

**AL** If auto length is disabled, the scan will be clipped at the specified size. When enabled, the full length of the original will be scanned.

**QL** Quality level of the scanned data. It is also used to implement file size optimization in the scanner.

**CK** Determines whether or not a check plot should be made after scanning.

**PA** Plot account identification. The host's accounting information for checkplots.

**PU** Plot user identification. Host's user identification for checkplots.

**HS** Host scan identification.

0 If set to disabled, the copier's identification is used for accounting of scans.

1 If set to enabled, the AI and UI values are used.

**HP** Host plot identification.

0 If set to disabled, the copier's identification is used for accounting of plots.

1 If set to enabled, the PA and PU values are used.

**JI** The host's identification for a scan job. It can be used later on to refer to a scan job. For example, to cancel a job or modify its settings.

**AI** The host's accounting identification for a scan job, used when HS is set to 0.

**UI** The host's user identification for a scan job, used when HS is set to 0.

**TX** A user identifiable text string (maximum 26 characters) that is used to identify the scan. It is displayed on the scanner's control panel.

**Note:** *Since the string is part of the RCF header, it may not contain commas or quotes.*

---

## Examples

Enable the scan mode and ask for a transfer size of 65024 bytes.

```
BEGMF "";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches";  
APPLDATA 028 "CM=0, TS=65024";  
ENDMF;
```

When in scan mode, start an A0 scan, tiled, TIFF group-4, 400 dpi, Job ID 345, Account ID 4213, and User ID 893.

```
BEGMF "";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches";  
APPLDATA 028 "CM=3, PF=0, FO=0, FF=0, CO=0, RS= 400, JI=345,  
AI=4213, UI=893, TX="city_map"";  
ENDMF;
```

**Note:** *There are two double quotes after city\_map in this example.*

---

## Note

There are a number of important machine dependencies involved in the scan to file process. For more details, see ‘Scan to file protocol’ on page 171.

**Multiple scans in progress** The 9700 and 9800 is capable of making a new scan when the controller is busy compressing the previous one, provided there is enough memory available in the controller.

The 9400 can only make a new scan when the previous scan has completely arrived at the host.

In case of multiple originals the scan-to-file application must be prepared to handle information sent by the controller about different jobs. Each job is identified by its job identification. The scan to file host application is responsible for generating unique job identifications. Those identifications are passed to the controller when sending the job parameters (START\_SCANJOB and UPDATE\_SETTINGS) and when a scan job has to be aborted (ABORT\_SCAN\_JOB).

---

# APPLDATA 029 Image alignment

(RCF 2.0)

---

## Description

This command controls the position of the bitmap (plot) on the sheet. It is also used for the positioning of overlays relatively to the basic file.

---

## Syntax

APPLDATA 029 "LR=Left Right alignment, TB=Top Bottom alignment";

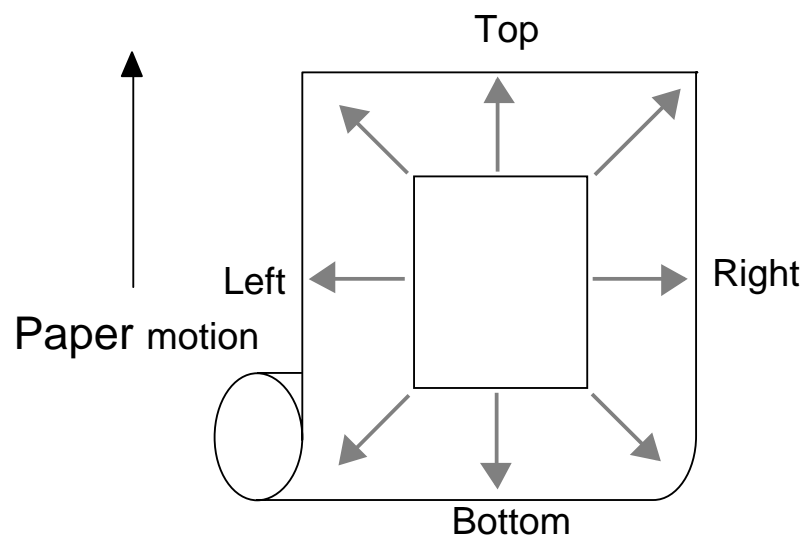
| <b>parameter</b>            |    | <i>Type</i> | <i>Meaning</i>                     |
|-----------------------------|----|-------------|------------------------------------|
| <i>Left Right alignment</i> | LR | <num>       | Left (0), right (1), centered (2). |
| <i>Top Bottom alignment</i> | TB | <num>       | Top (0), bottom (1), centered (2). |

---

## Arguments

**LR** The bitmap may be aligned at the left edge (0), the right edge (1), horizontally centered (2) or not aligned = left as is (3).

**TB** The bitmap may be aligned at the top (0), the bottom (1) or vertically centered (2).



[30] Alignment options

**Overlays** The image alignment controls the position of the overlay file relatively to the basic file.

---

## Example

Align the bitmap to both the left and the bottom edge of the paper:

```
APPLDATA 029 "LR=0, TB=1";
```

Place the overlay at the top center of the basic file:

```
APPLDATA 029 "LR=2, TB=0";
```

---

## Notes

Not all alignment combinations are allowed on all machines. For example, the Océ 9700 and 9800 allow nine positions in the overlay file but only allows five positions in the basic file.

---

# APPLDATA 050 HP-GL emulation

(RCF 2.0. ME added in RCF 2.5)

---

## Description

This command is used to specify the HP-GL parameters.



---

## Syntax

APPLDATA 050 "TY=HP plotter type, OR=Origin, SP=SP0 End of file, ME=Merge";

| <b>parameter</b>           |    | <i>Type</i> | <i>Meaning</i>   |
|----------------------------|----|-------------|--|
| <i>Plotter type</i>        | TY | <num>       | Type of emulated HP plotter, see below.                    |
| <i>Origin</i>              | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), or Center (4) |
| <i>SP0 End of file</i>     | SP | <num>       | Pen 0 indicates End-of-file: yes (0), or no (1).           |
| <i>Color merge control</i> | ME | <num>       | On (1) or off (0)  |

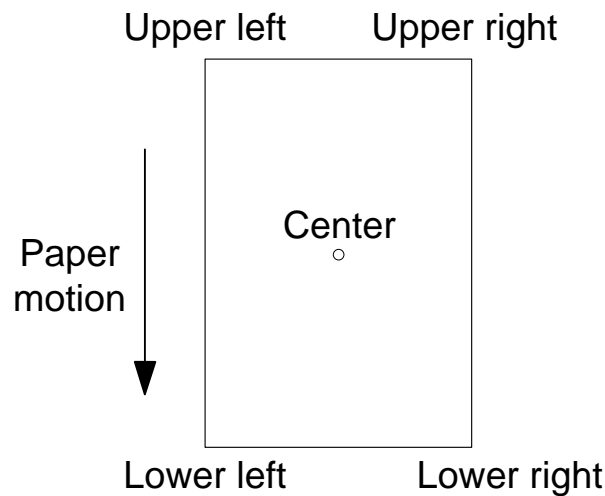
---

## Arguments

**TY** The type (model number) of plotter that should be emulated. This is used for HP-GL's OI (Output Identification) command.

| <b>Type</b> | <b>Model</b> | <b>Type</b> | <b>Model</b> |
|-------------|--------------|-------------|--------------|
| 0           | HP-7440      | 6           | HP-7585B     |
| 1           | HP-7475A     | 7           | HP-7586B     |
| 2           | HP-7550A     | 8           | HP-7595A     |
| 3           | HP-7570A     | 9           | HP-7596A     |
| 4           | HP-7580A     | 10          | HP-7600      |
| 5           | HP-7580B     | 11          | DesignJet    |

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).



[31] Plot origin options

**SP** If enabled, the selection of pen 0 is interpreted as the end of file (EOF). There is no pen number “zero” in HP-GL, and some HP-GL files use the SP0 (select pen zero) command to indicate that the plot is finished. If disabled, pen 0 will behave like a default HP-GL pen.

**ME** Color merge control. This parameter gives the default value for the HP-GL instruction MC, when the latter is not specified in the language. That is, it determines what happens when two or more colors intersect at the same point on a plot, especially at the intersection of vectors or filled polygons.

- 0 If the color merge control is set to Off, the color of the last vector line or area fill overwrites the colors specified at the same crossing area. White areas are always considered opaque.
- 1 If set to On, all the colors are blended together (merged) at the intersection of vectors or polygons.

**Note:** *If the MC (merge control) command is defined in the HP-GL file, the ME parameter will be overwritten.*

---

## Example

The next command will set the origin to lower left, and pen 0 as end of file:  
 APPLDATA 50 "OR=0, SP=0";

---

## Note

Contrary to the old APPLDATA 5, this one does NOT implicitly select the HP-GL language.

---

# APPLDATA 051 HP-GL/2 emulation

(RCF 2.0. ME added in RCF 2.4)

---

## Description

This command is used to specify the HP-GL/2 parameters.

---

## Syntax

APPLDATA 051 "TY=HP plotter type, OR=Origin, SP=SP0 End of file, PP=Pen priority, ME=Merge";

| <b>parameter</b>           |    | <i>Type</i> | <i>Meaning</i>   |
|----------------------------|----|-------------|--|
| <i>Plotter type</i>        | TY | <num>       | Type of emulated HP plotter, see below.                    |
| <i>Origin</i>              | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), or Center (4) |
| <i>SP0 End of file</i>     | SP | <num>       | Pen 0 indicates end-of-file, yes (0), or no (1).           |
| <i>Pen priority</i>        | PP | <num>       | Language (0), or Setup (1)                                 |
| <i>Color merge control</i> | ME | <num>       | Off (0) or On (1)  |

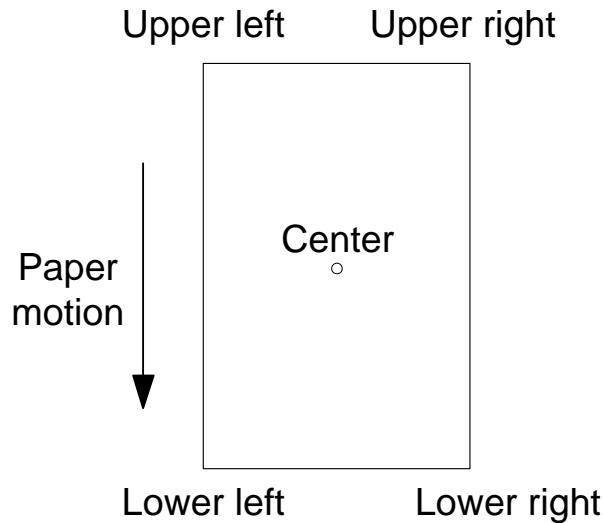
---

## Arguments

**TY** The type (model number) of plotter that should be emulated. This is used for HP-GL's OI (Output Identification) command.

| <b>Type</b> | <b>Model</b> |
|-------------|--------------|
| 8           | HP-7595A     |
| 9           | HP-7596A     |
| 10          | HP-7600      |
| 11          | DesignJet    |

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4):



[32] Plot origin options

**SP** If enabled, the selection of pen 0 is interpreted as the end of file (EOF). HP-GL/2 files may use the SP0 (select pen zero) instruction to indicate that the plot is finished. If disabled, pen 0 is interpreted and will behave like a default HP-GL/2 pen.

**PP** Pen parameters can be defined in three ways: from within the plot data file, from the printer's control panel or in the remote configuration file. The pen priority option allows you to define which pen parameter set you wish to use.

- 0 If PP is set to Language, the pen parameters defined in the data file will be used
- 1 If PP is set to Setup, the pen parameters defined in the remote configuration file, or on the printer control panel will be used.

By default, pen priority is set to Language (0). If the pens are defined through APPLDATA 1 (pen attributes), the pen priority should be set to Setup (1). That is, use the remote configuration file instead of the language (plot file) to define the pen attributes.

**Note:** *If the PP is set to 1 and there is no APPLDATA 1, the pen settings on the printer's control panel will be used.*

**ME** Color merge control. This parameter gives the default value of the HP-GL/2 instruction MC, when the latter is not specified in the language. That is, it determines what happens when two or more colors intersect at the same point on a plot, especially at the intersection of vectors or filled polygons.

- 0 If the color merge control is set to Off, the color of the last vector line or area fill overwrites the colors specified at the same crossing area. The behaviour of white areas is determined by the HP-GL/2 instruction TR.
- 1 If set to On, all the colors are blended together (merged) at the intersection of vectors or polygons.

**Note:** *If the MC (merge control) command is defined in the HP-GL/2 file, the ME parameter will be overwritten.*

---

## Example

The next command will set the origin to lower right and set the emulated plotter to DesignJet:

```
APPLDATA 51 "TY=11, OR=1";
```

---

## Note

Contrary to the old APPLDATA 5, this one does NOT implicitly select the HP-GL/2 language.

---

# APPLDATA 052 CALS emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.

---

# APPLDATA 053 BGL emulation

(RCF 2.0)

---

## Description

This command is used to configure the BGL mode of the plotter.

---

## Syntax

APPLDATA 053 "OR=Origin, ST=Step, F1=Font type 1, C1=Character set 1, F2=Font type 2, C2=Character set 2, TY=Océ plotter type, PP=Pen priority";

| <b>parameter</b>    |    | <i>Type</i> | <i>Meaning</i>   |
|---------------------|----|-------------|--|
| <i>Origin</i>       | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), Center (4)                                |
| <i>Step</i>         | ST | <fxp>       | Unit of coordinate system in microns, 12.5, 25, 50, or 100 micron                      |
| <i>Font type 1</i>  | F1 | <num>       | Type of primary font, Isoarc (0), Din 17 (1), Leroy (2), Cyrillic (3), or Isovec (4)   |
| <i>Char set 1</i>   | C1 | <num>       | Character set of primary font, only applies to Isoarc and Isovec (see below).          |
| <i>Font type 2</i>  | F2 | <num>       | Type of secondary font, Isoarc (0), Din 17 (1), Leroy (2), Cyrillic (3), or Isovec (4) |
| <i>Char set 2</i>   | C2 | <num>       | Character set of secondary font, only applies to Isoarc and Isovec (see below).        |
| <i>Océ type</i>     | TY | <str>       | Plotter identification string (10 chars maximum).                                      |
| <i>Pen priority</i> | PP | <num>       | Language (0), or remote (1)  |

---

## Arguments

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).

**ST** Step size, the unit for the coordinate system in microns, either 12.5, 25, 50, or 100.

**F1, F2** Font type for the primary/secondary font, DIN17, LEROY, CYRILLIC, ISOARC, or ISOVEC.

**C1, C2** Character set for the primary/secondary font. Only applies to the ISOARC and ISOVEC fonts, for which the following character sets are available:

ISOARC: 20, 25, 29, 50 to 59, and 80

ISOVEC: 0, 5, 9, 30 to 39, and 60.

**Note:** *If you specify this parameter, you must specify F1/F2 as well.*

**TY** Plotter identification string, 10 characters maximum. This string is returned when BGL's IC-11 (inquire device identification) or RI (Return Identification) command is received.

**PP** Pen parameters can be defined in three ways: from within the plot data file, from the printer's control panel or in the remote configuration file. The pen priority option allows you to define which pen parameter set you wish to use.

0 If PP is set to Language, the pen parameters defined in the data file will be used

1 If PP is set to Setup, the pen parameters defined in the remote configuration file, or on the printer control panel will be used.

By default, pen priority is set to Language (0). If the pens are defined through APPLDATA 1 (pen attributes), the pen priority should be set to Setup (1). That is, use the remote configuration file instead of the language (plot file) to define the pen attributes.

**Note:** *If the PP is set to 1 and there is no APPLDATA 1, the pen settings on the printer's control panel will be used.*



---

## Example

The next command states that the step size will be 50 microns, origin in lower-left corner, and primary font set to LEROY:

```
APPLDATA 53 "OR=0, ST=50, F1=2";
```

---

## Notes

Contrary to the old `apldata 4`, this one does NOT implicitly select the BGL language.

The changed syntax with respect to `apldata 4` allows both fonts to be defined in a single `apldata`.

---

# APPLDATA 054 VDF emulation

(RCF 2.0)

---

## Description

This command is used to configure the VDF mode of the plotter.

---

## Syntax

APPLDATA 054 "OR=Origin, ST=Step, F1=Font type 1, C1=Character set 1, F2=Font type 2, C2=Character set 2, TY=Océ plotter type, PP=Pen priority";

| <b>parameter</b>    |    | <i>Type</i> | <i>Meaning</i>   |
|---------------------|----|-------------|--|
| <i>Origin</i>       | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), Center (4)                                |
| <i>Step</i>         | ST | <fxp>       | Unit of coordinate system in microns, 12.5, 25, 50, or 100 micron                      |
| <i>Font type 1</i>  | F1 | <num>       | Type of primary font, Isoarc (0), Din 17 (1), Leroy (2), Cyrillic (3), or Isovec (4)   |
| <i>Charset1</i>     | C1 | <num>       | Character set of primary font, only applies to Isoarc and Isovec (see below).          |
| <i>Font type 2</i>  | F2 | <num>       | Type of secondary font, Isoarc (0), Din 17 (1), Leroy (2), Cyrillic (3), or Isovec (4) |
| <i>Charset2</i>     | C2 | <num>       | Character set of secondary font, only applies to Isoarc and Isovec (see below).        |
| <i>Océ type</i>     | TY | <str>       | Plotter identification string (10 chars maximum.)                                      |
| <i>Pen priority</i> | PP | <num>       | Language (0), or Remote (1)  |

---

## Arguments

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).

**ST** Step Size, the unit for the coordinate system in microns, either 12.5, 25, 50, or 100.

**F1, F2** Font type for the primary/secondary font, DIN17, LEROY, CYRILLIC, ISOARC, or ISOVEC.

**C1, C2** Character set for the primary/secondary font. Only applies to the ISOARC and ISOVEC fonts, for which the following character sets are available:

ISOARC: 20, 25, 29, 50 to 59, and 80

ISOVEC: 0, 5, 9, 30 to 39, and 60

**Note:** *If you specify this parameter, you must specify F1/F2 as well.*

**TY** Plotter identification string, 10 characters maximum. This string is returned when the VDF "inquire device identification" command (0x2B) (which is equivalent to BGL's IC-11 command) or "Return Identification" command (0x28) (which is equivalent to BGL's RI command) is received.

**PP** Pen parameters can be defined in three ways: from within the plot data file, from the printer's control panel or in the remote configuration file. The pen priority option allows you to define which pen parameter set you wish to use.

0 If PP is set to Language, the pen parameters defined in the data file will be used

1 If PP is set to Setup, the pen parameters defined in the remote configuration file, or on the printer control panel will be used.

By default, pen priority is set to Language (0). If the pens are defined through APPLDATA 1 (pen attributes), the pen priority should be set to Setup (1). That is, use the remote configuration file instead of the language (plot file) to define the pen attributes.

**Note:** *If the PP is set to 1 and there is no APPLDATA 1, the pen settings on the printer's control panel will be used.*

---

## Example

The next command states that the step size will be 50 microns, origin in lower-left corner, and primary font set to LEROY:

```
APPLDATA 54 "OR=0, ST=50, F1=2";
```

---

## Notes

Contrary to the old appldata 4, this one does NOT implicitly select the VDF language.

The changed syntax with respect to appldata 4 allows both fonts to be defined in a single appldata.

---

# APPLDATA 055 TIFF emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.

---

# APPLDATA 056 ASCII

(RCF 2.0)

---

## Description

This command describes the ASCII 'language' parameters.

---

## Syntax

APPLDATA 056 "EL=End of line, LO=Line overflow, FS=Font size, TM=Top margin, BM=Bottom margin, LM=Left margin, RM=Right margin, OR=Orientation";

| <b>parameter</b>     |    | <i>Type</i> | <i>Meaning</i>  |
|----------------------|----|-------------|---|
| <i>End of line</i>   | EL | <num>       | Type of line break in use, CR only (0), LF only (1), or CR-LF (2) |
| <i>Line overflow</i> | LO | <num>       | Long line handling, either wrap (0) or truncate (1)               |
| <i>Font size</i>     | FS | <num>       | Font size to use, 8, 10, or 12 Points                             |
| <i>Top margin</i>    | TM | <fxp>       | Allowed range is 0 to 25mm (1")                                   |
| <i>Bottom margin</i> | BM | <fxp>       | Allowed range is 0 to 25mm (1")                                   |
| <i>Left margin</i>   | LM | <fxp>       | Allowed range is 0 to 25mm (1")                                   |
| <i>Right margin</i>  | RM | <fxp>       | Allowed range is 0 to 25mm (1")                                   |
| <i>Orientation</i>   | OR | <num>       | Portrait (0) or Landscape (1)                                     |

---

## Arguments

**EL** Type of line break used in the ASCII file.

-Unix normally uses only a line-feed (LF only (1)),

-DOS uses CR-LF (2),

-Apple Macintosh uses only a carriage return (CR only (0)).

**LO** How long lines should be handled, either truncated (1), or wrapped to the following line (0).

**FS** The font size to use, in points.

**TM, BM, LM, RM** The margins to keep around the text, must be in the range 0 to 25.4mm (1"). "Top" and "Bottom" are related to the input, not the orientation of the paper

**OR** Specifies how the selected paper format will be used when placing the text.

This parameter has been added in RCF 2.2.

---

## Example

The following APPLDATA will select a 10 point font, wraps long lines, and uses carriage-return as the end of line character:

```
APPLDATA 056 "EL=0, LO=0, FS=10";
```

---

## Note

In order to print ASCII data, the language must explicitly be set to ASCII, it cannot be recognised automatically (see 'APPLDATA 059 Automatic language sensing' on page 124).

---

# APPLDATA 057 PostScript emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.



---

# APPLDATA 058 CalComp emulation

(RCF 2.0)

---

## Description

This command is used to define the parameters for the CalComp 906/907 languages.

---

## Syntax

APPLDATA 058 "x=Origin, ST=Step, CK=Checksum, EM=End of message, SY=Sync code, DB=Double sync, PP=Pen priority, ME=Merge";

| <b>parameter</b>           |    | <i>Type</i> | <i>Meaning</i>   |
|----------------------------|----|-------------|--|
| <i>Origin</i>              | OR | <num>       | Plot origin, LL (0), LR (1), UL (2), UR (3), or Center (4)                     |
| <i>Step</i>                | ST | <num>       | Steps/inch. Either 100, 200, 400, 500, 1016, 2032, or 4064                     |
| <i>Checksum</i>            | CK | <num>       | Checksum yes (0), or no (1)  |
| <i>End of message</i>      | EM | <num>       | Character flagging the end of the data sequence, 0 <= eom <=30                 |
| <i>Sync code</i>           | SY | <num>       | Character flagging the beginning of a block of plot data, 0 <= sync code <= 63 |
| <i>Double sync</i>         | DB | <num>       | Double sync yes (0), or no (1)   |
| <i>Pen priority</i>        | PP | <num>       | Language (0), or Remote (1)  |
| <i>Color merge control</i> | ME | <num>       | On (1) or off (0)  |

---

## Arguments

**OR** The origin of the plot, Lower-Left (0), Lower-Right (1), Upper-Left (2), Upper-Right (3), or Center (4).

**ST** Number of steps per inch.

**Note:** *This should correspond to the resolution of the plot.*

**CK** Enables or disables the checksum mechanism.

**EM** Character code for the end-of-message byte, indicating the end of a data sequence.

**SY** Character code for the sync byte, indicating the beginning of the plot data.

**DB** Enables or disables the double sync. That is, whether or not the byte which begins the plot data is sent twice.

**PP** Pen parameters can be defined in three ways: from within the plot data file, from the printer's control panel or in the remote configuration file. The pen priority option allows you to define which pen parameter set you wish to use.

0 If PP is set to Language, the pen parameters defined in the data file will be used

1 If PP is set to Setup, the pen parameters defined in the remote configuration file, or on the printer control panel will be used.

By default, pen priority is set to Language (0). If the pens are defined through APPLDATA 1 (pen attributes), the pen priority should be set to Setup (1). That is, use the remote configuration file instead of the language (plot file) to define the pen attributes.

**Note:** *If the PP is set to 1 and there is no APPLDATA 1, the pen settings on the printer's control panel will be used.*

**ME** Color merge control. This parameter determines what happens when two or more colors intersect at the same point on a plot, especially at the intersection of vectors or filled polygons.

0 If the color merge control is set to Off, the color of the last vector line or area fill overwrites the colors specified at the same crossing area. White areas are always considered opaque.

1 If set to On, all the colors are blended together (merged) at the intersection of vectors or polygons.

---

## Example

The following command will set the step to 2032 steps/inch, origin lower-right, sync byte to 0, and end of message (EOM) byte to 30 (decimal):

```
APPLDATA 58 "OR=1, ST=2032, SY=0, EM=30";
```

---

## Note

Steps are available in inches only.

# APPLDATA 059 Automatic language sensing

(RCF 2.0)

## Description

This command configures the Automatic Language Sensing (ALS) feature.

## Syntax

APPLDATA 059 "LG=Language, WS=ALS working set";

| <b>parameter</b> |    | Type  | Meaning  |
|------------------|----|-------|--|
| Language         | LG | <num> | The language to process, or auto (0)                           |
| ALS working set  | WS | <lst> | If in auto-mode, the set of languages the ALS may choose from. |

## Arguments

**LG** The language can be set explicitly with this parameter, using the numbers in table [33] Language selection. If set to auto, the ALS is used with the set of languages specified by the WS parameter.

**WS** The list of languages from which the automatic language sensing may choose.

The languages are numbered as follows:

| Number | Language           | Number | Language   |
|--------|--------------------|--------|------------|
| 0      | Auto               | 7      | ASCII      |
| 1      | HP-GL              | 8      | PostScript |
| 2      | HP-GL/2 and HP-RTL | 9      | HP-RTL     |
| 3      | Cals               | 10     | C4/EDMICS  |
| 4      | BGL                | 11     | NIRS       |
| 5      | VDF                | 12     | CalComp    |
| 6      | TIFF               | 13     | CGM        |

[33] Language selection

---

## Example

The following appldata configures the ALS for HP-GL/2 and TIFF, and activates it:

```
APPLDATA 59 "WS=<2,6>, LG=0";
```

---

## Note

On some controllers, selecting HP-GL/2 implies HP-RTL (use LG=2 or WS=2). Others only support HP-GL/2 (use LG=2 or WS=2) **or** HP-RTL (use LG=9 or WS=9).

---

# APPLDATA 060 C4 emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.

---

# APPLDATA 061 NIRS emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.

---

# APPLDATA 062 HP-RTL emulation

(RCF 2.0)

---

## Description

Reserved for future extension, no parameters yet.



---

# Backchannel messages

The purpose of backchannel communication is to give the customer a status of the machine configuration and to provide him with accounting information and scanning information.

More precisely, it allows the user to obtain:

- the machine configuration (APPLDATA 100)
- paper information (APPLDATA 101)
- status information (APPLDATA 102)
- accounting information (APPLDATA 103 and 107)
- controller configuration (APPLDATA 105)
- scan information (APPLDATA 106)
- stamp information (APPLDATA 108).

**Note:** *Back channel messages are currently specified for the Océ 9700 and 9800 only.*

---

## Backchannel request

This can be done via the command APPLDATA 027, Host requests. Information asked for via the request type RT parameter is sent to the host as soon as the command is decoded. The request must always be in a separate metafile-pair (BEGMF ... ENDMF) in which the description (MFDESC) type is set to StatusRequest.

When APPLDATA 028, Scan to file, is received, the printer responds by sending an APPLDATA 106 to the host.

**Note:** *For all backchannel messages, the size of the transfer block must be equal to 65024 bytes. However, if only APPLDATA 106 is requested, the size of the message may be specified via parameter TS in APPLDATA 028.*

---

## Returned files

The controller always sends backchannel information in a separate metafile-pair in which the host request description type (MFDESC) is set to Status info.

The controller sends backchannel information in BEGMF-ENDMF-pairs until all the available backchannel info has been sent. The last block is signalled by an APPLDATA 199 (End of backchannel) as very last appldata. All previous pairs do not contain this appldata.

APPLDATA 106 is the only command which is returned in a BEGMF-ENDMF pair with Scan to file as type in the description (MFDESC).

---

## Implementation of accounting parameters

Some of the job information that is returned to the host is sent, via APPLDATA 002, to the printer first.

**Single jobs** Commands APPLDATA 002, Job parameters and 027, Host requests, may be placed in the RCH of the single job.

**Set jobs** The AC, AI, UI parameters of command APPLDATA 002, Job parameters, must be placed in the Set Header of the set job. The parameter PI must be placed in all RCH files to identify every plot of the set job.

All parameters of the command APPLDATA 027 may be placed in the Set Header of the Set job.

**Matrix jobs** For matrix jobs, each program is accounted as a separate job.

The AC, AI, UI parameters of command APPLDATA 002, Job parameters, should be placed in the MPs of the matrix job.

All parameters of command APPLDATA 027 may be placed in the RCH file of each plot.

---

# APPLDATA 100 Machine configuration

(RCF 2.3. FD, ND and LC are new in RCF 2.4)

---

## Description

This command contains the machine configuration, it is sent to the host on request (see 'APPLDATA 027 Host requests' on page 94).

---

## Syntax

APPLDATA 100 "MS=Set memory size, SU=Stamp unit, FU=Fold unit, PU=Punch and reinforce unit, FD=Fold deposit unit, ND=Not folded deposit unit, LC=Long copy unit, IU=Input units, LG=Language, SN=Serial number, CC=Copier configured, PC=Printer configured, SC=Scan to file configured";

| <b>parameter</b>                       |    | <i>Type</i> | <i>Meaning</i>   |
|--|----|-------------|--|
| <i>Set memory size</i>                 | MS | <num>       | The memory size can be 36 (0), 72 (1), 108 (2), or 144MB (3)   |
| <i>Stamp unit</i>                      | SU | <num>       | Present (1) or not (0)   |
| <i>Folder unit</i>                     | FU | <num>       | None (0), folder with first fold output (1), folder without first fold output (2)  |
| <i>Punch and reinforce unit</i>        | PU | <num>       | None (0) or punch-only (1), reinforce-only (2) or punch and reinforce (3)  |
| <i>Deposit unit for folded plots</i>   | FD | <num>       | Stacker (0), one belt (1), or two belts (2)  |
| <i>Deposit unit for unfolded plots</i> | ND | <num>       | Copy delivery tray (0) or High capacity stacker (1)  |
| <i>Long copy unit</i>                  | LC | <num>       | Present (0) or not present (1).  |
| <i>Input units</i>                     | IU | <num>       | Millimeters (0), or inches (1)   |
| <i>Language</i>                        | LG | <num>       | Dutch (0), English (1), American (2), German (3), French (4), Norwegian (5), Swedish (6), Danish (7), Spanish (8), Italian (9). Finnish (10), Portuguese (11). |
| <i>Serial number</i>                   | SN | <num>       | A 9-digit number. For example, 9800xxxxx   |

| <b>parameter</b>               |    | <i>Type</i> | <i>Meaning</i>                         |
|--------------------------------|----|-------------|--|
| <i>Copier configured</i>       | CC | <num>       | Function configured yes (1), or no (0) |
| <i>Printer configured</i>      | PC | <num>       | Function configured yes (1), or no (0) |
| <i>Scan to file configured</i> | SC | <num>       | Function configured yes (1), or no (0) |

## Arguments

**MS** This represents the engine's set memory size.

**SU** Stamp unit is available, yes or no.

**FU** Indicates which output folder unit is installed on the machine.

**PU** Type of punch and reinforce unit available.

**FD** Indicates which unit for folded plots is installed on the machine.

**ND** Indicates which unit for unfolded plots is installed on the machine.

**LC** Indicates whether the output unit for long plots is installed on the machine.

**IU** Tells if the machine is uses metric units or inches. This specifies how all the parameters will be interpreted.

**LG** The control panel is configured with one of the 12 supported languages.

**SN** The 9-digit serial number of the machine. The first 4 digits specify the type of machine, the remaining 5 are the manufacturing number.

**CC** Whether or not the machine is configured to handle the copy function.

**PC** Whether or not the machine is configured to handle the print function.

**SC** Whether or not the machine is configured to handle the scan-to-file function.

---

## Examples

If the following appldata is returned to the host,

```
APPLDATA 100 "MS=0, SU=0, FU=2, PU=1, FD=1, ND=1, LC=0, IU=0,  
LG=1, SN=980000001, CC=1, PC=1, SC=1";
```

the engine has 36MB of set memory, no stamp unit available, folder without first fold output, punch is active, folded plots will be deposited on the first belt, unfolded plots will be deposited on the high capacity stacker, long copy unit is inactive, the control panel is configured for the metric system, in the English language, the machine's serial number is 980000001 and the copy, print, and scan-to-file functions are all activated.

---

## Note

This command is only sent on request, with all the parameters.

---

# APPLDATA 101 Paper information

(RCF 2.0)

---

## Description

This command returns a description of the available rolls, their size, and the type of media on them. It is only sent to the host on request (see ‘APPLDATA 027 Host requests’ on page 94).

---

## Syntax

APPLDATA 101 "R1=Roll 1 status, R2=Roll 2 status, R3=Roll 3 status, R4=Roll 4 status, F1=Roll 1 format, F2=Roll 2 format, F3=Roll 3 format, F4=Roll 4 Format, M1=Roll 1 media, M2=Roll 2 media, M3=Roll 3 media, M4=Roll 4 media";

| <b>parameter</b>      |    | <i>Type</i> | <i>Meaning</i>  |
|-----------------------|----|-------------|---|
| <i>R1, R2, R3, R4</i> | Rx | <num>       | Roll 1,2,3,4 is present (1), or not (0)                                       |
| <i>F1, F2, F3, F4</i> | Fx | <num>       | The format of roll 1,2,3,4 - see table [34] Roll formats table below.         |
| <i>M1, M2, M3, M4</i> | Mx | <num>       | The media of roll 1,2,3,4, plain paper (0), transparent (1), or polyester (2) |

---

## Arguments

**Rx** Tells if roll x is present (1) or not (0)

**Fx** Returns the format of Roll x.

**Note:** *Formats A4, A, and A+ rolls do not exist.*

| Number | Size         | Number | Size         |
|--------|--------------|--------|--------------|
| 0      | A0           | 12     | C+ (18 x 24) |
| 1      | A1           | 13     | B+ (12 x 18) |
| 2      | A2           | 15     | B1           |
| 3      | A3           | 16     | B2           |
| 5      | E (34x44)    | 17     | B3           |
| 6      | D (22x34)    | 18     | B4           |
| 7      | C (17x22)    | 19     | 30 inch      |
| 8      | B (11x17)    | 20     | 500 mm       |
| 10     | E+ (36 x 48) | 21     | 700 mm       |
| 11     | D+ (24 x 36) | 22     | 707 mm       |

[34] Roll formats table

**Mx** Returns the media type of roll x.

---

## Example

If the following appldata is returned to the host,

APPLDATA 101 "R1=1, R2=1, R3=1, R4=1, F1=0, F2=0, F3=1, F4=1, M1=0, M2=0, M3=1, M4=1";

all rolls are mounted, with plain paper A0 on rolls 1 and 2, and transparent A3 on rolls 3 and 4.

---

## Note

All parameters (That is, R1 to R4, F1 to F4, M1 to M4) are returned to the host.

---

# APPLDATA 102 Status information

(RCF 2.0)

---

## Description

The status of the system, including possible errors, is described by this command. It is only sent to the host on request (see 'APPLDATA 027 Host requests' on page 94).

---

## Syntax

APPLDATA 102 "ER=Engine running, EW=Engine warm, EI=Engine in error state, ES=Engine service, EC=Engine cover, PM=Plot mode, CM=Copy mode, UM=Upload mode, EE=Engine error";

| <b>parameter</b>             |    | <i>Type</i> | <i>Meaning</i>  |
|------------------------------|----|-------------|---|
| <i>Engine running</i>        | ER | <num>       | Running (1), or not (0)                                   |
| <i>Engine warm</i>           | EW | <num>       | Engine is warm (1), or not (0)                            |
| <i>Engine in error state</i> | EI | <num>       | Engine is in an error state (1), or not (0)               |
| <i>Engine service</i>        | ES | <num>       | Engine is in service mode (1), or not (0)                 |
| <i>Engine cover</i>          | EC | <num>       | One or more of the engine covers are open (1), or not (0) |
| <i>Plot mode</i>             | PM | <num>       | Enabled (1), or disabled (0)                              |
| <i>Copy mode</i>             | CM | <num>       | Enabled (1), or disabled (0)                              |
| <i>Upload mode</i>           | UM | <num>       | Enabled (1), or disabled (0)                              |
| <i>Engine error</i>          | EE | <num>       | Engine error number                                       |



---

## Arguments

- ER** Whether or not the engine is running.
- EW** Whether or not the engine is warm.
- EI** Whether or not the engine is in an error state
- ES** Whether or not the engine is in service mode
- EC** Whether or not one (or more) of the engine covers are opened.
- PM** The plot mode control panel setting
- CM** The copy mode control panel setting
- UM** The upload (scan to file) control panel setting.
- EE** The engine's 5-digit error code, 0 means no error pending.

---

## Example

If the following appldata is returned

```
APPLDATA 102 "ER=1, EW=1, EI=0, ES=0, EC=0, PM=1, CM=1, UM=1, EE=0";
```

the engine is running in normal operation mode, plot, copy, and upload are enabled, all covers are closed, and no error is pending.

---

## Note

All parameters are returned.

---

# APPLDATA 103 Accounting information

(RCF 2.0. JI, JT, SR, SF, SW, SH, AS, are new in RCF 2.4)

---

## Description

This command gives the accounting information per scan. Clicks is the machine's unit for counting (square) meters or feet of paper, transparent film, etcetera. See 'Set backchannel' in 'APPLDATA 027 Host requests' on page 94 on how to enable or disable this command.

---

## Syntax

APPLDATA 103 "PT=Print type, AI=Account ID, UI=User ID, JI=Job ID, JT=Job type, SR=Scan resolution, SF=Scan file format, SW=Scan width, SH=Scan height, AS=Accounting selected, ST=Sort type, TO=Total originals, TF=Total folded, TU=Total punched, TR=Total reinforced, TS=Total stamped, TE=Total edited, TG=Total enlarged, TC=Total reduced, PP=Paper prints, PC=Paper clicks, YP=Polyester prints, YC=Polyester clicks, SP=Transparent prints, SC=Transparent clicks";

| <b>parameter</b>           |    | <i>Type</i> | <i>Meaning</i>                     |
|----------------------------|----|-------------|------------------------------------|
| <i>Print type</i>          | PT | <num>       | Print (0), copy (1) or upload (2). |
| <i>Account ID</i>          | AI | <num>       | Nine digit account number          |
| <i>User ID</i>             | UI | <num>       | Nine digit user identification     |
| <i>Job ID</i>              | JI | <num>       | Nine digit identification number.  |
| <i>Job type</i>            | JT | <num>       | Normal job (0) or Matrix job (1).  |
| <i>Scan resolution</i>     | SR | <num>       | Resolution of the scanned image.   |
| <i>Scan file format</i>    | SF | <num>       | TIFF (0) or CALS (1).              |
| <i>Scan width</i>          | SW | <num>       | Width of the scanned bitmap.       |
| <i>Scan height</i>         | SH | <num>       | Height of the scanned bitmap.      |
| <i>Accounting selected</i> | AS | <num>       | Disabled (0) or Enabled (1)        |

| <b>parameter</b>          |    | <i>Type</i> | <i>Meaning</i>                       |
|---------------------------|----|-------------|--------------------------------------|
| <i>Sort type</i>          | ST | <num>       | Sort by page (0) or sort by set (1). |
| <i>Total originals</i>    | TO | <num>       | Number of printed originals          |
| <i>Total folded</i>       | TF | <num>       | Number of folded prints              |
| <i>Total punched</i>      | TU | <num>       | Number of punched prints             |
| <i>Total reinforced</i>   | TR | <num>       | Number of reinforced prints          |
| <i>Total stamped</i>      | TS | <num>       | Number of stamped prints             |
| <i>Total edited</i>       | TE | <num>       | Number of edited (framed) prints     |
| <i>Total enlarged</i>     | TG | <num>       | Number of enlarged prints            |
| <i>Total reduced</i>      | TC | <num>       | Number of reduced prints             |
| <i>Paper prints</i>       | PP | <num>       | Number of paper prints               |
| <i>Paper clicks</i>       | PC | <num>       | Paper media clicks used              |
| <i>Polyester prints</i>   | YP | <num>       | Number of polyester prints           |
| <i>Polyester clicks</i>   | YC | <num>       | Polyester media clicks used          |
| <i>Transparent prints</i> | SP | <num>       | Number of transparent prints         |
| <i>Transparent clicks</i> | SC | <num>       | Transparent media clicks used        |

## Arguments

**PT** The type of print: Print, copy or upload.

**AI** The account id identifies the customer account information for prints coming from the host. This information depends on the print type PT parameter and is given by:

- If PT=0 (print)  
then the account ID is given by the account ID from the APPLDATA002. (AI=002 AI)
- If PT=1 (copy)  
then the account ID is given by the control panel ID. (AI=LUI)
- If PT=2 (upload with checkplot)  
and if APPLDATA028 HP=0 (host plot identification disabled), then the account ID is given by the control panel ID. (AI=LUI)  
or if APPLDATA028 HP=1 (host plot identification enabled), then the account ID is given by the plot account ID (PA) from the APPLDATA028. (AI=028 PA)

- If PT=2 (upload without a checkplot)  
and if APPLDATA028 HS=0 (host scan identification disabled), then the account ID is given by the control panel ID. (AI=LUI)  
or if APPLDATA028 HS=1 (host scan identification enabled), then the account ID is given by the host's accounting ID (AI) from the APPLDATA028. (AI=028 AI)

The default values are determined by the control panel settings.

**UI** Identifies the user that has sent the plot. This information depends on the print type PT parameter and is given by:

- If PT=0 (print)  
then the user ID is given by the user identification UI from the APPLDATA002. (UI=002 UI)
- If PT=1 (copy)  
then the user identification is given by the control panel identification (UI=LUI).
- If PT=2 (upload with checkplot)  
and if APPLDATA028 HP=0 (host plot identification disabled), then the user identification is given by the control panel ID. (UI=LUI)  
or if APPLDATA028 HP=1 (host plot identification enabled), then the user identification is given by the plot user identification (PU) from the APPLDATA028. (UI=028 PU).
- If PT=2 (upload without a checkplot)  
and if APPLDATA028 HS=0 (host scan identification disabled), then the user identification is given by the control panel ID. (UI=LUI)  
or if APPLDATA028 HS=1 (host scan identification enabled), then the user identification is given by the user identification (UI) from the APPLDATA028. (UI=028 UI).

The default values are determined by the control panel settings.

**JI** The job identification depends on the print type parameter PT and is given by:

- If PT=0 (print)  
then the job ID is given by the job ID from the APPLDATA002 (JI=002 JI).
- If PT=1 (copy)  
then the job ID is given by the control panel ID. (JI=LUI)
- If PT=2 (upload)  
then the job ID equal to the job ID from the APPLDATA028 (JI=028 JI).

**JT** Indicates normal job or a matrix job. (Refer to 'Matrix print job' on page 24 to 27).

**SR** Indicates the resolution of the scanned bitmap in dots per inch.

**SF** The scan file format can be TIFF (0) or CALS (1).

**SW** Width of the scanned bitmap in mm or inches (according to the setting of the printer).

**SH** Height of the scanned bitmap in mm or inches (according to the setting of the printer).

**AS** Accounting selected. By default AS=1 (enabled) is always sent to the host unless the AC parameter of APPLDATA 2 is disabled, in which case A=0 (disabled) is sent to the host.

**Note:** *The controller will always give the accounting information, regardless of the setting of the accounting parameter in APPLDATA 002. However, the AS flag can be used by external applications, for example billing software can ignore jobs that are marked AS=0.*

**ST** Sort type, multiple copies are either by set (setwise) (123, 123, 123) or by page (sortwise) (111, 222, 333).

**TP** Total number of originals printed by the engine, counts both the scanner and the controller input.

**TF** Total number of folded prints.

**TU** Total number of punched prints.

**TR** Total number of reinforced prints.

**TS** Total number of stamped prints.

**TE** Total number of edited/framed prints.

**TG** Total number of enlarged prints.

**TC** Total number of reduced prints.

**YP, SP, PP** The number of prints for the given media.

**YC, SC, PC** The number of clicks for the given media.

---

## Notes

This command must be enabled with the APPLDATA 27.

For a multipage document, only one apldata is returned to the host.

The apldata is sent for each scan.

The SR, SF, SW and SH parameters are only sent by the controller when PT=2 (print type = upload).

APPLEDATA 107 gives additional information on paper and media (also returned after a call to APPLDATA 27).

---

# APPLDATA 104 Plot status report

(RCF 2.0)

---

## Description

This command has been removed in RCF 2.4. Error recovery is now completely handled by the machine.

---

# APPLDATA 105 Controller configuration

(RCF 2.0)

---

## Description

This command lists the options of the controller, and is only available on request (see 'APPLDATA 027 Host requests' on page 94).

---

## Syntax

APPLDATA 105 "FP=Firm pack version, OP=Optional firm pack version, HD=Hard disk, LL=Long line, SC=SCSI, ET=Ethernet, FR=Frame buffer ram, PR=Primary ram, SR=Secondary ram";

| <b>parameter</b>                 |    | <i>Type</i> | <i>Meaning</i>  |
|----------------------------------|----|-------------|---|
| <i>Firmware version</i>          | FP | <num>       | 4 digit number describing the firmware version.                 |
| <i>Optional firmware version</i> | OP | <num>       | 4 digit number describing the version of the optional firmware. |
| <i>Hard disk</i>                 | HD | <num>       | Present (1), or not (0).  |
| <i>Long line</i>                 | LL | <num>       | Present (1), or not (0).  |
| <i>SCSI</i>                      | SC | <num>       | Present (1), or not (0).  |
| <i>Ethernet</i>                  | ET | <num>       | Present (1), or not (0).  |
| <i>Frame buffer ram</i>          | FR | <num>       | Amount of RAM in MByte.   |
| <i>Primary ram</i>               | PR | <num>       | Amount of RAM in MByte.   |
| <i>Secondary ram</i>             | SR | <num>       | Amount of RAM in MByte.   |

---

## Arguments

**FP** The main firmware version: 4 digits in the form xx.yy.

**OP** The optional firmware version: 4 digits in the form xx.yy.

**HD** If the hard disk is available



**LL** If the long line interface is available

**SC** If a SCSI interface is available

**ET** If a Ethernet interface is available

**FR** Amount of available RAM for the frame buffer

**PR** Amount of available RAM for the primary CPU

**SR** Amount of available RAM for the secondary CPU

---

## Notes

This command is only sent on request.

For a system without secondary CPU, the secondary CPU ram parameter (SR) value is meaningless, or may not be sent at all.

---

# APPLDATA 106 Scanner info/data

(RCF 2.3)

---

## Description

This command returns the scanned data or status information to the host. It is always sent in response to a Scan to file command (See ‘APPLDATA 028 Scan to file’ on page 96) and, optionally, followed by the scanned data.

See ‘Scan to file protocol’ on page 171 for further information.

---

## Syntax

APPLDATA 106 "US=Upload status, TY=Type, DL=Data length, WD=Width, LG=Length, JI=Job identification, EC=Error code";

| <b>parameter</b>          |    | <i>Type</i> | <i>Meaning</i>  |
|---------------------------|----|-------------|---|
| <i>Upload status</i>      | US | <num>       | Controller is busy (0), ready to scan (1), scanner is not available (2), error detected (3), scanner processing (4), job aborted (5) or job updated (6).                            |
| <i>Type</i>               | TY | <num>       | No data (0), data block (1) or data end (2).  |
| <i>Data length</i>        | DL | <num>       | Number of bytes of image data in the block.   |
| <i>Width</i>              | WD | <num>       | Width of scanned image in pixels.   |
| <i>Length</i>             | LG | <num>       | Length of scanned image in pixels.  |
| <i>Job identification</i> | JI | <num>       | Job identification as defined by the host in the scan request.  |
| <i>Error code</i>         | EC | <num>       | Job not found (0), update ignored (1), invalid RCF parameter (2), missing RCF parameter (3), RCF syntax error (4), memory full (5), compression overflow (6), controller error (7). |

---

## Arguments

**US** This parameter has two roles, depending on the CO parameter of APPLDATA 28. (See page 96)

- In response to a get status (CO=5) US gives the scan status.
  - 0 Controller busy is returned when the controller is busy and not ready to enter scan mode.
  - 1 Ready to scan means that the scanner is ready to receive a start scan command.
  - 2 Scanner not available means the controller is processing start to scan commands and is not able to accept new requests.
- In response to any other command (CO=0 to 4) the scan request job identification (JI) gives the job identification to which it pertains.
  - 3 Error detected. The error code (EC parameter) contains the exact error code.
  - 4 Scanner processing indicates that a scan is in progress. The settings for this scan can no longer be modified.
  - 5 Job aborted indicates successful completion of an abort scan job command.
  - 6 Job updated confirms the update settings command.

**TY** Specifies the type of data that follows this RCF header. The scan request job identification (JI) specifies to which job this block corresponds.

- 0 No data is used when the packet does not transport any scan data.
- 1 Data block means that there is a block of raster data.
- 2 Data end means it is the last data block for the given job identification number.

**DL** The amount of image data included in the block (in bytes).

**WD** The width of the image in pixels. This parameter is sent with the last data block of the image.

**LG** The length of the image in pixels. This parameter is sent with the last data block of the image.

**JI** Specifies the identification of the scan job to which this packet pertains.

**EC** The error code (accompanied by JI) can be one of the following:

- 0 Job not found. A command has been received, but the specified scan job doesn't exist.

- 1 Update ignored. The host sent an update settings command for a job that has already been flagged as being processed (scanner processing message).
- 2 RCF invalid parameter. An RCF parameter is invalid (and will be ignored).
- 3 RCF missing parameter. A command has been sent, but one of the mandatory parameters is missing. For example, the identification of the scan-job for an abort\_job command.
- 4 RCF syntax error. The controller detected a syntax error in the RCF.
- 5 Memory full. There is not enough memory in the controller to store the scanned data.
- 6 Compression overflow. A memory overflow occurred during internal treatment of the raster data. For example, during the compression.
- 7 Controller error. The current scan job is aborted.

---

## Example

When the host receives

```
BEGMF "...";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches";  
APPLDATA 106 "WD=12576, LG=18987, TY=2, DL=3207, JI=23";  
ENDMF;  
<32000 bytes of image data>
```

it receives the last 3207 bytes of scan-job 23, which is an image of 12576 x 18987 pixels.

---

## Note

This appldata is sent to the host for every APPLDATA 28 (scan to file) received.

---

# APPLDATA 107 Job accounting information

(RCF 2.3)

---

## Description

This command extends APPLDATA 103 (Accounting information) by returning accounting information on paper and media.

---

## Syntax

APPLDATA 107 "PF=Paper format, ME=Media, CO=Copies, LM=Length in metres";

| <b>parameter</b>        |    | <i>Type</i> | <i>Meaning</i>   |
|-------------------------|----|-------------|--|
| <i>Paper format</i>     | PF | <num>       | Format of the media used.                                      |
| <i>Media</i>            | ME | <num>       | Paper (0), Transparent (1), Polyester (2) or Manual feed (3)   |
| <i>Copies</i>           | CO | <num>       | Number of copies of the specified paper format and media type. |
| <i>Length in metres</i> | LM | <fxp>       | Number of metres printed on the roll.                          |

---

## Arguments

**PF** The format of the media used. Values are the same as APPLDATA 21. See 'Paper formats table' on page 150.

**ME** Media types can be paper, transparent, polyester or manual feed.

**CO** Number of copies of the specified paper format and media type.

**LM** This is the number of metres (real value) printed on a non standard format roll (30 inch, 500 mm, 700 mm or 707 mm).

| Number | Size         | Number | Size         |
|--------|--------------|--------|--------------|
| 0      | A0           | 11     | D+ (24 x 36) |
| 1      | A1           | 12     | C+ (18 x 24) |
| 2      | A2           | 13     | B+ (12 x 18) |
| 3      | A3           | 14     | A+ (9 x 12)  |
| 4      | A4           | 15     | B1 (707 mm)  |
| 5      | E (34x44)    | 16     | B2           |
| 6      | D (22x34)    | 17     | B3           |
| 7      | C (17x22)    | 18     | B4           |
| 8      | B (11x17)    | 19     | 30 inch      |
| 9      | A (8.5x11)   | 20     | 500 mm       |
| 10     | E+ (36 x 48) | 21     | 700 mm       |

[35] Paper formats table

---

## Example

All accounting information for a job must be sent in one BEGMF - ENDMF construction, because APPLDATA 103 and 107 are related. The order is fixed: first APPLDATA 103 and then zero or more APPLDATA 107:

```
BEGMF "Release 3.0";  
MFVERSION 1;  
MFDESC "Oce RCF, Version=2.4, Type=StatusInfo, Unit=Inches";  
APPLDATA 103 "JI=545, AI=123, UI=567, PT=0, ST=0, etc...";  
APPLDATA 107 "PF=1, ME=1, CO=125";  
APPLDATA 107 "PF=5, ME=0, CO=15";  
APPLDATA 107 "PF=2, ME=0, LM=40.6";  
ENDMF;
```

---

## Notes

This command can be of two mutually exclusive types:

- For standard formats, PF indicates the format, ME the media type and CO the number of copies.
- For non standard formats, PF indicates the width of the roll (30 inch, 500 mm, 700 mm or 707 mm), ME the media type and LM the number of metres used.

Therefore, CO and LM can not be combined in one command.

This APPLDATA can occur multiple times.

---

# APPLDATA 108 Stamping information

(RCF 2.3)

---

## Description

This command returns stamping information.

---

## Syntax

APPLDATA 108 "SN=Stamp number, ST=Stamp text";

| <b>parameter</b>    | <i>Type</i> | <i>Meaning</i>                          |
|---------------------|-------------|---|
| <i>Stamp number</i> | <num>       | Number of the stamp.                    |
| <i>Stamp text</i>   | <num>       | Text string of the corresponding stamp. |

---

## Arguments

**SN** Number of the stamp.

**ST** Text string of the corresponding stamp.

**Note:** *Comma, double quotes, and single quotes are illegal characters in the RCF syntax. If they are specified in the text stamp, a special encoding is used. A special one-character encoding is used for the date and the time. See also ‘String types’ on page 164.*

| <b>Stamp string</b> | <b>Character name</b> | <b>Octal number</b> |
|---------------------|-----------------------|---------------------|
| <i>comma</i>        | dieresis              | \250                |
| <date>              | copyright             | \251                |
| <i>double quote</i> | ordfeminine           | \252                |
| <i>single quote</i> | guillemotleft         | \253                |
| <time>              | registered            | \256                |



---

## Notes

This command can occur multiple times.

---

## Example

```
APPLDATA 108 STR="The time is \256";
```

**Note:** *There are two double quotes after \256.*

---

# APPLDATA 199 End of backchannel

(RCF 2.3)

---

## Description

This command signals that the controller has sent all available information to the host.

It must be the last command in a BEGMF-ENDMF pair.

---

# Appendix A

## Glossary

*This chapter will help you understand words, abbreviations and acronyms used in the manual.*



|                 |  |
|-----------------|--|
| ADI             | Autodesk device interface, which enables input and output devices to be available to Autodesk users.   |
| ALS             | Automatic language sensing.  |
| APPLDATA        | The application data.  |
| BEGMF           | Begin metafile   |
| BLIS            | Block list input stream. A type of input channel.  |
| BNF             | Backus-Naur form. The grammar used for coding remote control format.   |
| CALS            | Computer aided acquisition and logistics support. A type of raster data format.  |
| CCF             | The current configuration file. Also called the current context.   |
| CDT             | Copy delivery tray. Rack for unfolded plots. An output device for the Océ 9800   |
| CGM             | Computer graphics metafile. A standard file format from which part is borrowed for use with the remote control format. See page 161.   |
| Clicks          | The machine's unit for counting (square) meters/feet of media.   |
| CMYK            | Cyan, magenta, yellow and black color system.  |
| CRT             | Copy receiving tray. The correct name is copy delivery tray.   |
| Current context | The current configuration file.  |
| Default context | Also known as UCF. The set of default attributes for all sessions, configured with the help of the front panel (KOS/MMI) or with a special RCF commands. The default context is not reset, even when the potter/printer is switched off. |
| Dithering       | A method of simulating on digital devices the halftone dots used in traditional printing. On black and white devices, dithering produces simulated grayscale. On color devices it provides varying degrees of color.                     |
| EC              | Exij color controller. Firmware identifier for the Océ 5100C.  |
| EDMICS          | A type of raster data format.  |

|        |   |
|--------|---|
| EM     | Exij monochrome controller. Firmware identifier for the Océ 5100.   |
| ENDMF  | End metafile  |
| EPC    | Embedded power controller, used in the Océ 9700 and 9800.   |
| FA     | The Frisco A controller, as present in the G9020-S series. This controller supports RCF version 1.            |
| FB     | The Frisco B controller, as present in the G9000-S and 9500-S series. This controller supports RCF version 1. |
| FBBS   | Frisco basic B specific. The Frisco B controller, used in the Océ 9800.                                       |
| FCF    | The factory configuration file. A read-only set of factory defaults which cannot be modified.                 |
| FIS    | File input stream. A type of input channel.   |
| FP     | The Frisco B controller, as present in the G9000-S and 9500-S series. This controller supports PostScript.    |
| FR     | The Frisco B controller, as present in the G9000-S and 9500-S series.   |
| FRISCO | Family of RISC controllers. An interface controller.  |
| FS     | The FBBS controller, as present in the Océ 9800. This controller supports RCF version 2.                      |
| fxp    | A fixed point number.   |
| GDI    | Graphics device interface of Windows.   |
| HCS    | High capacity stacker. An output device for the Océ 9800.   |
| HORUS  | Host software reusable modules.   |
| HRT    | Horizontal receiving tray, an output device for the Océ 9600.   |
| HSC    | High speed controller. Correct name is embedded power controller.   |
| HSW    | Host software development.  |
| IRT    | Integrated receiving tray, an output device on the Océ 9600.  |
| JD     | Job director. Part of the printroom application software.   |
| KOS    | Key operator system. Part of the control panel of an Océ printer.   |
| LCE    | Long copy escape. An output device for the Océ 9800.  |

|            |  |
|------------|--|
| LUI        | Local user interface. Control panel.   |
| LV         | Low volume Frisco B controller, used in the Océ 9400.  |
| lst        | A list of parameters.  |
| LZ         | Linz controller. Firmware identifier for the Océ 5120.   |
| Matrix job | A number of different print jobs based on the same set of files. For example: Combination of plots, number of copies, the media used, scale factor, etc. |
| ME         | The Mercury controller, as present in the G9000-C and 9500-C series. This controller fully implements RCF version 1.                                     |
| MFDESC     | Metafile description   |
| MFVERSION  | Metafile version   |
| MI         | Milan controller. Firmware identifier for the Océ 5200.  |
| MMI        | Man machine interface. Control panel.  |
| MP         | Matrix program.  |
| NGC        | New generation controller.   |
| NIRS       | A sub-set of CALS. A type of raster data format.   |
| num        | An integer number.   |
| OCI        | Océ controller interface.  |
| OJT        | Océ job ticket.  |
| PAS        | Printroom application software.  |
| PDK        | Partener development kit.  |
| POKER      | Portable kernel.   |
| PS         | PostScript, a page description language designed by Adobe, which describes text, graphics, scale, rotation, etc.   |
| RCF        | Remote control format. A job/file header in CGM format, used to specify plot job attributes with the help of Océ-defined APPLDATA commands.              |
| RCH        | Remote configuration header. A job/file header which conforms to the remote control format as defined in this manual.                                    |
| RGB        | Red, green and blue color definition.  |

|                 |   |
|-----------------|---|
| RS              | Repro station. Part of the printroom application software.  |
| SAS             | System administrator settings.  |
| SDS             | System diagnostic settings.   |
| Session         | <p>A logical pipe (data connection) between the user and the controller. In a session, a user can send plots to the plotter/printer, ask the controller about its status and start a scan.</p> <p><b>Note:</b> <i>Someone using one interface (for example: serial) is completely isolated from someone else using another interface (for example: Centronics). The remote control files sent to the machine will affect only the interface on which they arrive, they will not bother users on other interfaces.</i></p> |
| Session context | A set of attributes related to a session, which are used when processing the user's jobs. The user may define or modify the attributes of the session with the help of remote control files, which will update the session context for the following job.   |
| SRU             | Sheet receiving unit. The correct name is high capacity stacker.  |
| SS              | Scan station. Part of the printroom application software.   |
| str             | A string parameter.   |
| TIFF            | Tag information file format. (Tagged image file format). A type of raster data format.  |
| Temp user       | An RCH can be set so that the session context (parameters) are used for all jobs that follow, until a specific RCH reloads the default or factory context.  |
| UCF             | User configuration file. The user-customised default configuration.   |
| White space     | One or more occurrences of horizontal tab, space, carriage return, line feed, vertical tab, and/or form feed.   |





---

## Appendix B

# RCF grammar

*This chapter describes the syntax of the Remote Control Format. It is based on the Clear Text Encoding format of the ANSI X3.122-1986 standard named "Computer Graphics Metafile for the Storage and Transfer of Picture Description Information".*



---

## Conventions

**Notes:** *The RCF grammar does not contain all details of the ANSI format, only a subset.*

*The RCF uses the ASCII encoding standard.*

*Everything in an RCF that is not inside a string or a comment is case-insensitive.*

See ‘Command arguments’ on page 13 for details about the supported variable types (that is, strings, numbers, lists, etc.) that may be present in an RCF and their limitations.

The grammar is given in Backus-Naur form (BNF):

|                              |   |
|------------------------------|---|
| <code>&lt;symbol&gt;</code>  | Non-terminal  |
| <code>&lt;symbol&gt;*</code> | Star closure (0 or more occurrences)                        |
| <code>&lt;symbol&gt;+</code> | Plus closure (1 or more occurrences)                        |
| <code>... / ...</code>       | ... or ...  |
| <code>... ::= ...</code>     | ... is defined as ...                                       |
| <code>/* ... */</code>       | Comment, not part of the grammar.                           |
| <code>ascii n</code>         | Character indicated by the number n in the ASCII encoding.  |
| <code>"string"</code>        | Literal string that occurs, exactly as is, in the language. |

---

## Grammar

The RCF header is defined as follows:

```
<rcf_header>          ::= <begin_metafile>
                        <metafile_identifier>
                        <metafile_descriptor>
                        <metafile_contents>
                        <end_metafile>
<begin_metafile>      ::= "BEGMF"
                        <optsep>
                        <string>          /* user defined comment */
                        <term>
<end_metafile>        ::= "ENDMF" <term>
<metafile_identifier> ::= "MFVERSION"
                        <softsep>
                        <version>
                        <term>
<metafile_descriptor> ::= "MFDESC"
                        <optsep>
                        <mfdesc_string>  /* description */
                        <term>
<metafile_contents>  ::= <application_data>*
<application_data>   ::= "APPLDATA"
                        <softsep>
                        <num>             /* identifier */
                        < <optsep> | <hardsep> >
                        <appl_string>
                        <term>
<appl_string>        ::= <single_quote> <datarecord> <single_quote>
                        | <double_quote> <datarecord> <double_quote>
<term>               ::= <optsep>
                        <slash> | <semicolon>
                        <optsep>
<sepchar>            ::= <space>
                        | <line_feed>
                        | <horizontal_tab>
                        | <carriage_return>
<softsep>            ::= <sepchar>+
<optsep>             ::= <sepchar>*
```

|                   |   |
|-------------------|---|
| <hardsep>         | ::= <optsep> <comma> <optsep>                                 |
| <digit>           | ::= "0"   "1"   "2"   "3"   "4"   "5"   "6"   "7"   "8"   "9" |
| <letter>          | ::= "a"   "b"   ...   "y"   "z"   "A"   "B"   ...   "Y"   "Z" |
| <alphanumeric>    | ::= <digit>   <letter>  |
| <num>             | ::= <digit>+  |
| <space>           | ::= " " /* ascii 32 */  |
| <double_quote>    | ::= "\"" /* ascii 34 */                                       |
| <percent_sign>    | ::= "%" /* ascii 37 */  |
| <single_quote>    | ::= "'" /* ascii 39 */  |
| <slash>           | ::= "/" /* ascii 47 */  |
| <semicolon>       | ::= ";" /* ascii 59 */  |
| <horizontal_tab>  | ::= ascii 9   |
| <line_feed>       | ::= ascii 10  |
| <vertical_tab>    | ::= ascii 11  |
| <form_feed>       | ::= ascii 12  |
| <carriage_return> | ::= ascii 13  |

## String types

String parameters are represented as character strings immediately surrounded by a pair of either single-quote or double-quote characters. The string itself cannot contain a single-quote when is surrounded by single-quote characters, the same holds for the use of a double quote in a string surrounded by double-quote characters.

|                 |  |
|-----------------|--|
| <string>        | ::= <single_quote> <str_no_single> <single_quote><br>  <double_quote> <str_no_double> <double_quote> |
| <str_no_single> | ::= < <string_char>   <double_quote> >*  |
| <str_no_double> | ::= < <string_char>   <single_quote> >*  |
| <string_char>   | ::= <alphanumeric>   <sepchar>   <equal>   <comma>   <dash><br>  <less_than>   <greater_than>        |

---

## Metafile descriptor string

This string is used to recognise the Océ RCF headers:

```
<string>          ::= <single_quote> <str_no_single> <single_quote>
<mfdesc_string>   ::= <single_quote> <oce_ident> <single_quote>
                   | <double_quote> <oce_ident> <double_quote>
```

For **RCF version 1** headers, the <oce\_ident> string is:

```
<oce_ident>       ::= "Oce Graphics Configuration format V1.00"
```

For **RCF version 2** and higher, this becomes:

```
<oce_ident>       ::= "Oce RCF"<hardsep><version><hardsep><type><hardsep><unit>
<version>         ::= "Version=" <fixed_point>
<type>            ::= "Type=Header"
                   | "Type=MatrixPrg"
                   | "Type=ScanToFile"
                   | "Type=StatusInfo"
                   | "Type=StatusRequest"
<unit>            ::= "Unit=Metric"
                   | "Unit=Inches"
<fixed_point>     ::= <digit>+
                   | <digit>+ <point> <digit>*
```

**Note:** *The whole <oce\_ident> string is case-insensitive, including the type and unit settings.*

---

## Command argument

The contents of the command argument (data record) which occurs as a string in the grammar above has the following syntax:

```
<datarecord>      ::= <optsep>                               /* may be empty */
                   | <optsep> <param_list> <optsep>
<param_list>      ::= <param>
                   | <param> <hardsep> <param_list>
<param>           ::= <key> <equal> <value>
<key>             ::= <letter> <alphanumeric>
<value>           ::= <num>
                   | <num> <dash> <num>
                   | <fixed_point>
                   | <list>
<list>            ::= <less_than> <optsep> <numlist> <optsep> <greater_than>
<numlist>         ::= <num>
                   | <num> <listsep> <numlist>
<listsep>         ::= <softsep> | <hardsep>
<comma>           ::= ","                                     /* ascii 44 */
<dash>            ::= "-"                                     /* ascii 45 */
<less_than>       ::= "<"                                     /* ascii 60 */
<equal>           ::= "="                                     /* ascii 61 */
<greater_than>    ::= ">"                                     /* ascii 62 */
```

**Note:** *The whole data-record is case-insensitive.*

---

## Comments

Comments are encoded as a series of printing characters and <sepchar>'s surrounded by "%" (percent-sign) characters. The text of the comment must not include this (percent-sign) comment delimiter character.

Comments may be included in any place that a separator (indicated by <softsep>, so also as part of a <hardsep>), may be used, and are equivalent to a <softsep>; they may be replaced by a space-character in parsing, without affecting the meaning of the metafile.

---

# Appendix C

## Grouping commands and settings

*This section categorises the available commands and their parameters according to the following criteria:*

- *Some parameters take immediate action.*  
(Such as: flush media saver, get factory settings or erase disk).
- *Others are used later on, when processing the plot that follows.*  
(Such as: pen settings or plot transformations).

*In both cases, the parameter or command:*

- *may only apply to the following plot (for example, pen settings).*
- *may be restricted to the following jobs in the local session.*  
(For example, temp user and set jobs affect a number of plots).
- *may affect all sessions (for example, when an ‘erase disk’ clears the template, it affects the whole machine).*



---

## System-wide commands

The following commands affect all sessions:

APPLDATA 2 If bypass BY is set to force, the media saver will be flushed immediately, causing all accumulated jobs to be printed.

The media saver EM parameter will switch the media saver on or off, which affects all sessions.

APPLDATA 7 Erase disk affects all sessions since it deletes the global template file.

APPLDATA 8 The definition of a template with the help of the status ST=define parameter will replace the existing global template.

APPLDATA 10 Replacing the default context with the reset defaults RD=repl\_dflt parameter redefines the default context for all sessions and the MMI.

---

## Session commands

The following commands affect the session, and are executed as soon as they are decoded:

APPLDATA 10 Loading the default or factory context with the reset defaults RD=load\_default or load\_factory parameter will replace the context. Any parameters that are present in the same RCH but located before this command are lost. The temp\_user flag will be cleared as well.

---

## Session parameters

The following commands and parameters are limited to the current session, but may affect more than just the following job:

APPLDATA 2 The status ST parameter of this appldata combines a number of files into a job, the leading RCH defines the default parameters for every file in that job.



APPLDATA 10 Setting the temp\_user flag (reset defaults parameter) means that the current settings remain in effect for all the jobs that follow, until further notice.

---

## Plot parameters

The following commands directly affect the next Plot (or the following Plots if temp\_user is active):

APPLDATA 1 Pen attributes

APPLDATA 2 Job parameters. The parameters of this appldata that fall into this category are CO (number of copies), LP (long plot), PI (plot id), AI (account id), UI (user id), and BY (bypass), except for Bypass=Force.

APPLDATA 3 Transformation.

APPLDATA 4 Océ Emulation.

APPLDATA 5 HP Emulation.

APPLDATA 6 CalComp Emulation.

APPLDATA 8 Template/Merge. Status ST=enable or disable affects just the following plot (The definition of a template, Status=Define, affects all sessions).

APPLDATA 9 User defined pen patterns.

APPLDATA 11 CALS/TIFF.

APPLDATA 12 Copy configuration.

APPLDATA 13 Roll selection.

APPLDATA 14 Print quality.

APPLDATA 15 Color attributes.

APPLDATA 20 Stamp.

APPLDATA 21 Media selection.

APPLDATA 22 Finishing.

APPLDATA 23 Delivery.

APPLDATA 24 Edge correction.

APPLDATA 25 Framing.

APPLDATA 29 Image alignment.

APPLDATA 50 HP-GL.

APPLDATA 51 HP-GL/2.

APPLDATA 52 CALS.

APPLDATA 53 BGL.

APPLDATA 54 VDF.

APPLDATA 55 TIFF.

APPLDATA 56 ASCII.

APPLDATA 57 PostScript.

APPLDATA 58 CalComp.

APPLDATA 59 ALS configuration.

APPLDATA 60 C4.

APPLDATA 61 NIRS.

APPLDATA 62 HP-RTL.

---

## Status information

The following commands interrogate the controller for its status and configuration:

- APPLDATA 0 This prints the configuration of the current session, and some machine wide parameters (the actual contents of the report is controller dependent).
- APPLDATA 27 The request type RT parameter of this command can be used to query the machine. The result is sent back over the backchannel.

---

# Appendix D

## Scan to file protocol

*The communication from host to controller is done by using  
APPLDATA 028: Scan to file.*

*The communication from controller to host is done by using  
APPLDATA 106: Scanner info/data.*



---

# Basic structure

The basic structure of the Océ RCF adheres to the CGM specification:

```
BEGMF "<title>";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=<version>, Type=<type>, Unit=<unit>';  
<Oce Application data>  
ENDMF;
```

---

## From host to controller

The example below shows how the host sends APPLDATA 028 (enable scan mode with transfer size 65024) to the controller:

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches';  
APPLDATA 028 "CM=0,TS=65024";  
ENDMF;
```

**Note:** For scan-to-file <version> must be 2.3 (or a later version) and <type> must be Scan to file.

---

## From controller to host

There are two kinds of replies from the controller. Both are coded in APPLDATA 106: one which sends information to the host and another that sends scanned data.

### Information from the controller

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches';  
APPLDATA 106 "TY=0, US=1";  
ENDMF;
```

**Data from the controller** After an original has been scanned the data is sent in blocks to the host. The size of the blocks is send to the controller by the enable scan mode command.

The appldata below returns a data block of 12506 bytes for job id 2.

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Inches';  
APPLDATA 106 "TY=1, DL=12506, JI=2";  
ENDMF; DATA
```

**Note:** *The actual data start is contained in the block received from the controller starting at the first byte following the semicolon after ENDMF.*

## A typical scan-to-file session

The table below shows the typical sequence of RCF commands from host to controller and vice versa. The host must first enable the scan mode. The controller tells the host that the scanner is ready to accept an original. The user can change settings before an original is fed. The data will be processed inside the controller (For example, compressed) and sent in blocks to the controller. More scans can be made after the scanner is ready. After the last scan has been made, the scan-to-file mode can be terminated by disabling the scan mode.

| Step | Host To Controller             | Controller To Host                   |
|------|--------------------------------|--------------------------------------|
| 1    | Enable scan mode               |                                      |
| 2    |                                | Ready to scan                        |
| 3    | Start scan job                 |                                      |
| 4    | Update settings                |                                      |
| 5    | Feed the original              |                                      |
| 6    |                                | Scanner processing                   |
| 7    |                                | Data block plus Data end or Data end |
|      |                                | Ready to scan                        |
|      | Make more scans (go to step 3) |                                      |
| 8    | Disable scan mode              |                                      |

**Note:** *The host can send an UPDATE SETTINGS command when the user wants to change settings that have already been sent to the controller. They will be taken into account only when the host has sent START SCANJOB.*

*It is possible that the complete scanned data fits into one block. In that case the controller returns 1 block DATA END.*

---

## Multiple scans in progress

It is possible to have multiple scans in progress depending on the target machine. E.g. the Océ 9700 and 9800 is capable of making a new scan when the controller is busy compressing the previous one and there is enough memory available in the controller (configurable for the Océ 9700 and 9800). The Océ 9400 can only make a new scan when the previous one has completely arrived at the host.

In case of multiple originals the scan-to-file application must be prepared to handle information sent by the controller about different jobs. Each job is identified by its job id. The scan-to-file host application is responsible for generating unique job id's. Those id's are passed to the controller when sending the job parameters (START SCANJOB and UPDATE SETTINGS) and when a scan job has to be aborted (ABORT SCAN JOB).

---

## The SCSI connection between host and controller

Upload with Océ 9400, 9700 and 9800 controllers is possible only by using a SCSI connection.

In SCSI terms the host scan application is an initiator and the controller is a target. The host is responsible for driving the scan-to-file protocol. The controller (the target) can never send information to the host when the host did not ask for it. The controller will only send information to the host when the host issues a READ command on the SCSI bus.

Furthermore the controller behaves as a TANDBERG tape unit. There are 3 logical channels defined: 2 print channels (0 and 2) and one upload channel (1).

When the host wants to upload data from the controller, the host should issue a SCSI space 1 command. All RCF commands should be sent by means of SCSI WRITE commands. To get information and/or data the host should use SCSI READ commands.

An application should be prepared to receive either upload information (APPLDATA 106) or other backchannel commands as a response to a SCSI read command.

---

# A sample of interactive scan to file

---

## Host-Controller (Enable scan mode)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=0, TS=65024";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

(No RCF content)

---

## Controller-Host (Ready to scan)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=1";  
ENDMF;
```

---

## Host-Controller (Start scan job)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=3, FF=0, FO=0, CP=1, RS=400, JI=365, AI=524310,  
UI=5815, TX=400-TIFF";  
ENDMF;
```

---

## Host-Controller (SCSI read command)



---

## Host-Controller (Get scan status)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=5";  
ENDMF;
```

---

## Controller-Host (Scanner not available)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=2";  
ENDMF;
```

---

## Host-Controller (Update settings)

The user changes to 200 dpi.

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=4, FF=0, FO=0, CP=1, RS=200, JI=1, AI=524310,  
UI=5815, TX=200-TIFF";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

---

## Controller-Host (Job updated)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=6, JI=1";  
ENDMF;
```

---

## Host-Controller (Get Scan Status)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=5";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

---

## Controller-Host (Scanner processing)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=4, JI=365";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

---

## Controller-Host (Scanner not available)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=2";  
ENDMF;
```

---

## Host-Controller (Get scan status)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=5";  
ENDMF;
```

---

Host-Controller (SCSI read command)

---

Controller-Host (Data block)

Open temporary file (C:\temp\~stf1678.TMP)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=1, DL=330, JI=365";  
ENDMF;
```

---

Host-Controller (SCSI read command)

---

Controller-Host (Data block)

Writing 64864 bytes to temporary file

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=1, DL=64864, JI=365";  
ENDMF;
```

---

Host-Controller (SCSI read command)

---

Controller-Host (Data end)

Writing 25062 bytes to temporary file

Rename (C:\temp\~stf1678.TMP), new name was (C:\final\gg157.tif)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';
```

```
APPLDATA 106 "TY=2, DL=25062, WD=3312, LG=4766, JI=365";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

---

## Controller-Host (Scanner not available)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=2";  
ENDMF;
```

---

## Host-Controller (Get Scan Status)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=5";  
ENDMF;
```

---

## Host-Controller (SCSI read command)

---

## Controller-Host (Ready To Scan)

```
BEGMF "";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 106 "TY=0, US=1, JI=365";  
ENDMF;
```

---

## Host-Controller (Disable scan mode)

```
BEGMF "Upload version 1.0";  
MFVERSION 1;  
MFDESC 'Oce RCF, Version=2.3, Type=ScanToFile, Unit=Metric';  
APPLDATA 028 "CM=1";  
ENDMF;
```



---

# Appendix E

## Troubleshooting



---

# Error handling

Whenever an error occurs, the controller will generate a error-message, if it is able (and configured) to do so.

---

## Invalid header

The result of an incorrect header is machine dependent. (The header will be skipped in most cases, but it may be treated as plot data, for example).

---

## Invalid syntax

Whenever a syntax error occurs (That is, the APPLDATA number is missing, no parameter list, etc.), the remainder of the remote control header will be ignored. It may generate a 'Syntax error' message.

---

## Unknown or unsupported APPLDATAs

Unknown commands are ignored, processing continues with the next one. It may generate a 'Not supported appldata' error message.

---

## Unknown or unsupported parameter

An unknown parameter is ignored, processing continues with the next parameter on the same line. It may generate a 'Not supported command' error message.

---

## Out of range values

When the value for a parameter is out of range, it will be ignored, the parameter is unchanged and the current controller default will be used instead. It may generate an 'Out of range' error message.



---

## Unbalanced set-starts and set-ends

This occurs whenever a second set-start is found while a set-end is expected. A 'Job description error' may be generated.

---

## Invalid matrix program reference

Occurs when a matrix program refers to a non-existing plot. A 'Job description error' may be generated.

---

# Error reporting

An error message may be returned to the host if the controller supports it, and there is a back-channel available. For example, the Océ 9700 and 9800 will report error messages to the local user interface (control panel) and to the host, while an Océ G9000 series plotter doesn't.

---

## Implementation - as per firmware types

**ECx** Supports RCF only.

**EMx** Supports RCF only.

**EPCx** Supports the latest RCF version 2. Does not support RCF1

**FAx** Only partially implements RCF1.

**FBx** Only partially implements RCF1.

**FPx** Supports RCF1 and RCF2.

**FRx** Supports RCF1 and RCF2.

**FSx** Partially implements RCF2.0. Does not support RCF1.

**LVx** Supports RCF1 and RCF2.

**LZx** Supports RCF2.

**Mlx** Supports RCF2.

**MEx** Only implements RCF1.

Appendix F

Compatibility table

*The matrix on the following pages lists Océ plotters and the relevant Remote Control Format commands and parameters supported.*

**Note:** *Some of the parameters may be specified in **overlay** files, which are not supported by the earlier printers.*



## Comments

A ☒ means the parameter or command is supported.

A ☐ means the parameter or command is not supported.

The reason it is not supported may be any of the following:

- it is decoded but treated as a NOP, with no error.
- it generates a "job description" error.
- it generates a "RCF: Command not supported" error.
- it generates a "RCF: Parameter not supported" error.

**Note:** *If a parameter is not specified in the RCF header, it will be left as is. That is, it will take the value defined previously or as present in the default context.*

*The behaviour of the printer is a function of the version of internal firmware installed. To verify the firmware on your machine, use the front panel “dump configuration” command. Refer to your User’s Manual for details.*

|                             | RCF level        |                                     |
|-----------------------------|------------------|-------------------------------------|
|                             | 4900 (BR01.01)   |                                     |
|                             | 5100 (EM 1.X)    |                                     |
|                             | 5100C (EC 1.X)   |                                     |
|                             | 5100C (EC 2.X)   |                                     |
|                             | 5120 (LZ1.X)     |                                     |
|                             | 5200 (MI 1.X)    |                                     |
|                             | 5200 (MI 1.X PS) |                                     |
|                             | G9000-C (ME 2.X) |                                     |
|                             | G9000-S (FB 2.X) |                                     |
|                             | G9000-S (FA 3.X) |                                     |
|                             | G9000-S (FP1.X)  |                                     |
|                             | G9000-S (FR1.X)  |                                     |
|                             | 9400 (LV 1.X)    |                                     |
|                             | 9400 (LV 2.X)    |                                     |
|                             | 9400 (LV 3.0)    |                                     |
|                             | 9400 (LV 3.1)    |                                     |
|                             | 9400 (LV 3.2)    |                                     |
|                             | 9400 (LV 3.0 PS) |                                     |
|                             | 9400 (LV 3.1 PS) |                                     |
|                             | 9400 (LV 3.2 PS) |                                     |
|                             | 9500 (ME 2.X)    |                                     |
|                             | 9500-S (FB 2.X)  |                                     |
|                             | 9500-S (FP1.X)   |                                     |
|                             | 9500-S (FR1.X)   |                                     |
|                             | 9600 (R1.X)      |                                     |
|                             | 9700 (EPC1.X)    |                                     |
|                             | 9800 (FBBS1.X)   |                                     |
|                             | 9800 (FBBS2.X)   |                                     |
|                             | 9800 (FBBS3.X)   |                                     |
|                             | 9800 (EPC1.X)    |                                     |
| RCF header units            |                  |                                     |
| Metric                      | 2                | <input checked="" type="checkbox"/> |
| Inch                        | 2                | <input type="checkbox"/>            |
| 000 Print plotter config    | 2.4              |                                     |
| TY=Type                     | 1                | <input type="checkbox"/>            |
| PW=Password                 | 1                | <input type="checkbox"/>            |
| 001 Pen attributes          |                  |                                     |
| PN=Pen number               | 1                | <input type="checkbox"/>            |
| PW=Pen width                | 1                | <input type="checkbox"/>            |
| PP=Pen pattern              | 1                | <input type="checkbox"/>            |
| PC=Pen color (Black/Hidden) | 1                | <input type="checkbox"/>            |
| PC=Pen color (RGB)          | 2.1              | <input type="checkbox"/>            |
| TR=Transparency             | 1                | <input type="checkbox"/>            |
| LE=Line end                 | 2.1              | <input type="checkbox"/>            |
| LJ=Line join                | 2.1              | <input type="checkbox"/>            |
| ML=Miter limit              | 2.1              | <input type="checkbox"/>            |

|                            | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.2 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |
|----------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|
| <b>002 Job parameters</b>  |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CO=Copies                  | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LP=Long plot               | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| EM=Efficiency manager      | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| BY=Bypass                  | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| JI=Job identification      | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PI=PlotID (Obsolete)       | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AI=Account identification  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| UI=User identification     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| JB=Job boundary            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AC=Accounting              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CM=Copy method             | 2.1       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PL=Plot list               | 2.1       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PN=Plot number (Ignored)   | 2.1       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| DU=Duplexing               | 2.5       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>003 Transformations</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| XS=X scale                 | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| YS=Y scale                 | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| RO=Rotation                | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| MR=Mirror                  | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AS=Autoscale               | 2         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ES=Enhanced scale          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SU=Shift up                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SD=Shift down              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SL=Shift left              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SR=Shift right             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AR=Auto rotate             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LC=Legend correction       | 2.2       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>004 Océ emulation</b>   |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| DF=Data format             | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                  | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ST=Step                    | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| FN=Font number             | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| FT=Font type               | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CH=Character set           | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TY=Océ plotter type        | 1         |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |

[illegible]

|                            | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.1 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBS1.X) | 9800 (FBS2.X) | 9800 (FBS3.X) | 9800 (EPC1.X) |
|----------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|---------------|---------------|---------------|---------------|
| <b>020 Stamp</b>           |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| SS=Stamp selection         | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| SN=String number           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| PO=Position                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| FS=Font size               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| GS=Gray scale              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| <b>021 Media selection</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| PF=Paper format            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| ME=Media                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| AF=Auto format             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| BY=Bypass                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| RM=Roll overruling method  | 2.2       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| RN=Roll number             | 2.2       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| RS=Roll selection          | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| TR=Tray selection          | 2.5       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| <b>022 Finishing</b>       |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| FO=Fold options            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| ME=Fold method             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| LE=Length                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| WI=Width                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| BE=Binding edge            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| FR=Fold orientation        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| <b>023 Delivery</b>        |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| DE=Deposit                 | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| CI=Cut information         | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| CL=Cut length              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| OU=Output                  | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| BN=Bin number              | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| JO=Jogging                 | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| <b>024 Edge correction</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| LA=Leading edge add        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| LR=Leading edge remove     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| TA=Trailing edge add       | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |
| TR=Trailing edge remove    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |               |               |               |               |

|                             |     | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.1 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |  |  |  |  |
|-----------------------------|-----|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|--|--|--|--|
| 025 Framing                 |     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| FM=Mode                     | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AX=Area X                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AY=Area Y                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AW=Area width               | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AH=Area height              | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| 026 Original to copy matrix |     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| S0=Format                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| S1=Format                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| S2=Format                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| S3=Format                   | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| 027 Host requests           |     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| RT=Request type             | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| SB=Set backchannel          | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| 028 Scan to file            |     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| CM=Command                  | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| TS=Transfer size            | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| FF=File format              | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| FO=File organisation        | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| OR=Orientation              | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| CP=Compression              | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| RS=Resolution               | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| SD=Size detection           | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| PF=Paper format             | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| CL=Custom length            | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| CW=Custom width             | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AL=Auto length              | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| QL=Quality                  | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| CK=Check plot               | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| PA=Plot account ID          | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| HS=Host scan ID             | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| HP=Host plot ID             | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| JI=Job ID                   | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| AI=Account ID               | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| UI=User ID                  | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| TX=Text string              | 2.3 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| 029 Image alignment         |     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| LR=Left Right alignment     | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |
| TB=Top Bottom alignment     | 2.0 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |  |  |



|                              | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.1 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |
|------------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|
| <b>050 HP-GL emulation</b>   |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TY=HP plotter type           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SP=SP0 End of file           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ME=Merge                     | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>051 HP-GL/2 emulation</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TY= HP plotter type          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SP=SP0 End of file           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PP=Pen priority              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ME=Merge                     | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>052 CALS emulation</b>    |           | 2.0            |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>053 BGL emulation</b>     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ST=Step                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| F1=Font type 1               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| C1=Character set 1           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| F2=Font type 2               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| C2=Character set 2           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TY=Océ plotter type          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PP=Pen priority              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>054 VDF emulation</b>     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ST=Step                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| F1=Font type 1               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| C1=Character set 1           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| F2=Font type 2               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| C2=Character set 2           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TY=Océ type                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PP=Pen priority              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>055 TIFF emulation</b>    |           | 2.0            |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |

|                                  | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.1 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |
|----------------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|
| <b>056 ASCII</b>                 |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| EL=End of line                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LO=Line overflow                 | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| FS=Font size                     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TM=Top margin                    | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| BM=Bottom margin                 | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LM=Left margin                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| RM=Right margin                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Orientation                   | 2.2       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>057 PostScript emulation</b>  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>058 CalComp emulation</b>     |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OR=Origin                        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ST=Step                          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CK=Checksum                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| EM=End of message                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SY=Sync code                     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| DB=Double sync                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PP=Pen priority                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ME=Merge                         | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>059 Auto language sensing</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LG=Language                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| WS=ALS working set               |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| Auto                             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| HP-GL                            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| HP-GL/2 and HP-RTL               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CALS                             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| BGL                              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| VDF                              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TIFF                             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ASCII                            | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PostScript                       | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| C4/EDMICS                        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| NIRS                             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CalComp                          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| CGM                              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>060 C4 emulation</b>          | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>061 NIRS emulation</b>        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>062 HP-RTL emulation</b>      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |

|                            |     | RCF level      |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
|----------------------------|-----|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|--|--|
|                            |     | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.2 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |  |  |
| 100 Machine configuration  |     |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| MS=Set memory size         | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| SU=Stamp unit              | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| FU=Fold unit               | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| PU=Punch unit              | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| FD=Fold deposit unit       | 2.4 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| ND=Not folded deposit unit | 2.4 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| LC=Long copy unit          | 2.4 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| IU=Input units             | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| LG=Language                | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| SN=Serial number           | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| CC=Copier configured       | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| PC=Printer configured      | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| SC=Scan to file configured | 2.3 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| 101 Paper information      |     |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| Rx=Roll x status           | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| Fx=Roll x format           | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| Mx=Roll x media            | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| 102 Status information     |     |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| ER=Engine running          | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| EW=Engine warm             | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| EI=Engine in error state   | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| ES=Engine service          | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| EC=Engine cover            | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| PM=Plot mode               | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| CM=Copy mode               | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| UM=Upload mode             | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |
| EE=Engine error            | 2.0 |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |  |

|                                   | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.2 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |
|-----------------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|
| <b>103 Accounting information</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AI=Account ID                     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| UI=User ID                        | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PT=Print type                     | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| JI=Job ID                         | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| JT=Job type                       | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SR=Scan resolution                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SF=Scan file format               | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SW=Scan width                     | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SH=Scan height                    | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| AS=Accounting selected            | 2.4       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ST=Sort type                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TO=Total originals                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TF=Total folded                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TU=Total punched                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TR=Total reinforced               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TS=Total stamped                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TE=Total edited                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TG=Total enlarged                 | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| TC=Total reduced                  | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PP=Paper prints                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PC=Paper clicks                   | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| YP=Polyester prints               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| YC=Polyester clicks               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SP=Transparent prints             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SC=Transparent clicks             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| <b>105 Controller information</b> |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| FP=Firm pack version              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| OP=Optional firm pack             | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| HD=Hard disk                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| LL=Long line                      | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SC=SCSI                           | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| ET=Ethernet                       | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| FR=Frame buffer ram               | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| PR=Primary cpu ram                | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |
| SR=Secondary cpu ram              | 2.0       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |

|                         | RCF level | 4900 (BR01.01) | 5100 (EM 1.X) | 5100C (EC 1.X) | 5100C (EC 2.X) | 5120 (LZ1.X) | 5200 (MI 1.X) | 5200 (MI 1.X PS) | G9000-C (ME 2.X) | G9000-S (FB 2.X) | G9000-S (FA 3.X) | G9000-S (FP1.X) | G9000-S (FR1.X) | 9400 (LV 1.X) | 9400 (LV 2.X) | 9400 (LV 3.0) | 9400 (LV 3.1) | 9400 (LV 3.2) | 9400 (LV 3.0 PS) | 9400 (LV 3.1 PS) | 9400 (LV 3.2 PS) | 9500 (ME 2.X) | 9500-S (FB 2.X) | 9500-S (FP1.X) | 9500-S (FR1.X) | 9600 (R1.X) | 9700 (EPC1.X) | 9800 (FBBS1.X) | 9800 (FBBS2.X) | 9800 (FBBS3.X) | 9800 (EPC1.X) |  |
|-------------------------|-----------|----------------|---------------|----------------|----------------|--------------|---------------|------------------|------------------|------------------|------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|-----------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|--|
| 106 Scanner info/data   |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| US=Upload status        | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| TY=Type                 | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| DL=Data length          | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| WD=Width                | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| LG=Length               | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| JI=Job identification   | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| EC=Error code           | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| 107 Job accounting info |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| PF=Paper format         | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| ME=Media                | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| CO=Copies               | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| LM=Length in metres     | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| 108 Stamping info       |           |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| SN=Stamp number         | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| ST=Stamp text           | 2.3       |                |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |
| 199 End of backchannel  |           | 2.3            |               |                |                |              |               |                  |                  |                  |                  |                 |                 |               |               |               |               |               |                  |                  |                  |               |                 |                |                |             |               |                |                |                |               |  |



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# Appendix G

## Miscellaneous



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# Notation conventions

There are a number of notation conventions used in this manual. This consistent style enables you to quickly become conversant with the use of this manual and consequently the Remote Control Format Software.

**Description** Each section or subsection contains a description of the feature or operation identified in the title. It might also include possible applications, as well as any guidelines that you should bear in mind.

**Procedures** A description is followed by a procedure. A procedure always begins with a phrase which briefly describes the procedure (for example, “Select a plot to file”) followed by a series of numbered steps that take you, step by step, through all phases of performing the operation.

**Attention getters** There are several types of information to which we draw your attention. This information is classified as follows:

**Note:** *In a ‘Note’, information is given about matters which ensure the proper functioning of the software, but useful advice concerning its operation may also be given.*

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**Attention:** *The information that follows ‘Attention’ is given to prevent something (for instance, your original diskettes) being damaged.*



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# Reader's comment sheet

Have you found this manual to be accurate?

- ☐ Yes
- ☐ No

Could you operate the product after reading this manual?

- ☐ Yes
- ☐ No

Does this manual provide enough background information?

- ☐ Yes
- ☐ No

Is the format of this manual convenient in size, readability and arrangement (page layout, chapter order, etc.)?

- ☐ Yes
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Could you find the information you were looking for?

- ☐ Always
- ☐ Most of the times
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- ☐ Not at all

What did you use to find the required information?

- ☐ Table of contents
- ☐ Index

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- ☐ Yes
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Thank you for evaluating this manual.

If you have other comments or concerns, please explain or suggest improvements overleaf or on a separate sheet.

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# Appendix H

## Océ Offices

*Please find on the next page the official list of Océ offices, Worldwide. Our salesforce and technical support engineers will be pleased to assist you whenever you need help for installing and using your plotting devices with the Océ software.*



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# Your Océ Contacts

## **AUSTRALIA**

### **Océ Australia Ltd.**

89 Tulip Road  
Cheltenham VIC 3192  
Tel: (61-3) 263 33 33  
Fax: (61-3) 584 43 57

## **AUSTRIA**

### **Océ-Osterreich GmbH**

Carlbergergasse 38  
A-1230 Wien  
Tel: (43-1) 865 36 10  
Fax: (43-1) 865 33 27

## **BELGIUM**

### **Océ Belgium S.A./N.V.**

Avenue Jules Bordet, 32  
1140 Brussels  
Tel: (32-2) 729 48 11  
Fax: (32-2) 729 49 10

## **BRAZIL**

### **Océ Brasil**

Av. Candido Portinari, 1174  
05114 Sao Paulo SP  
Tel: (55-11) 261 64 66  
Fax: (55-11) 832 25 88

## **CHINA**

### **Océ Office Equipment Co. Ltd.**

Xu Mu Cheng, Guangximen Bei Li  
Chao Yang District  
Beijing 100028  
Tel: (86) 10 6422 1622  
Fax: (86) 10 6426 3394

## **CZECHOSLOVAKIA**

### **Océ Ceska republika s.r.o.**

K Rysance 16  
147 54 Praha 4  
Tel: (42-2) 463 451  
Fax: (42-2) 461 260

## **DENMARK**

### **Océ Danmark A/S**

Kornmarksvej 6  
DK 2605 Broendby  
Tel: (45-43) 63 00 22  
Fax: (45-43) 43 06 22

## **FRANCE**

### **Océ-France S.A.**

32, avenue du Pavé Neuf  
B.P. 2  
93161 Noisy le Grand  
Tel: (33-1) 45 92 50 00  
Fax: (33-1) 43 05 12 15

## **GERMANY**

### **Océ-Deutschland GmbH**

Solinger Straße 5-7  
45481 Mülheim a. d. Ruhr  
Tel: (49-208) 48 45 0  
Fax: (49-208) 460 167

## **HONG KONG**

### **Océ (Hong Kong) Ltd.**

No 1, Hysan Avenue  
Causeway Bay,  
Hong Kong  
Tel: (852) 577 60 64  
Fax: (852) 577 89 57

**HUNGARY****Océ Hungaria KFT**

Karpat Ut 42

1133 Budapest

Tel: (36) 1 269 8836/8837

Fax: (36) 1 269 8835

**ITALY****Océ Italia S.p.A.**

Via Cassanese, 206

20090 Segrate, Milano

Tel: (39-2) 21 63 1

Fax: (39-2) 21 63 398

**MALAYSIA****Océ Systems Sdn. Bhd.**

15A, Jalan Universiti,

46200 Petaling Jaya,

Selangor Darul Ehsan,

Tel: (603) 7584088

Fax: (603) 7556125

**NETHERLANDS****Océ Nederlandse**

Verkoopmaatschappij B.V.

Brabantlaan, 2

5216 TV Den Bosch

Tel: (31-73) 68 15 815

Fax: (31-73) 61 20 685

**NORWAY****Océ Norge A.S.**

Gjerdrums vei 8

0486 Oslo 4

Tel: (47-22) 95 05 20

Fax: (47-22) 95 05 30

**POLAND****Océ-Poland Ltd.**

02-0232 Warszawa

ul. Lopuszanska 53

Tel: (48-22) 467429

Fax: (48-22) 467431

**PORTUGAL****Océ-Lima Mayer S.A.**

Av. Infante D. Henrique

Lote 309

1900 Lisboa

Tel: (351-1) 831 65 00

Fax: (351-1) 831 65 55

**SINGAPORE****Océ (Singapore) Pte Ltd**

1 Clementi Loop #01-01/02

Margateo Districentre

Clementi West Distripark

Singapore 129808

Tel: (65) 467 38 66

Fax: (65) 466 67 29

**Océ (Far East) Pte Ltd**

1 Clementi Loop #02-10

Margateo Districentre

Clementi West Distripark

Singapore 129808

Tel: (65) 467 30 22

Fax: (65) 466 74 26

**SPAIN****Océ España S.A.**

Poligono Mas Blau

c/Osona, 2

08820 Prat de Llobregat

Tel: (34-3) 484 48 00

Fax: (34-3) 484 48 28

**SWEDEN****Océ Svenska A.S.**

Isafjordsgatan 5  
Box 1231  
164 28 Kista  
Tel: (46-8) 703 41 50  
Fax: (46-8) 703 99 86

**SWITZERLAND****Océ (Schweiz) AG**

Sägereistrasse 29  
P.O. box 114  
8152 Glattbrugg ZH  
Tel: (41-1) 829 11 11  
Fax: (41-1) 829 13 48

**TAIWAN****Océ Graphics (Taiwan) Ltd**

No 99-24, Nan-Kang Road,  
Sec 2  
Taipei, Taiwan, R.O.C.  
Tel: (886-2) 651 65 16  
Fax: (886-2) 783 32 42

**THAILAND****Océ (Thailand) Ltd**

B.B. Building, 16th Floor  
54 Asoke Road  
Sukhumirt 21  
Bangkok 10110  
Tel: (662) 260 71 33  
Fax: (662) 260 71 37

**UNITED KINGDOM and IRELAND****Océ-Engineering Systems (UK) Ltd**

300 Park Avenue  
Aztec West, Almondsbury  
Bristol, BS12 4RG  
Tel: (44-1454) 61 77 77  
Fax: (44-1454) 61 84 35

**Océ (UK) Ltd**

Langston Road  
Loughton  
Essex, IG 103SL  
Tel: (44-181) 508 55 44  
Fax: (44-181) 508 66 89

**USA****Océ-Bruning Inc.**

1800 Bruning Drive West  
Itasca, IL 60143  
Tel: (1-708) 351-29 00  
Fax: (1-708) 351-75 49

**AFRICA,  
MIDDLE-EAST,  
SOUTH AMERICA,  
EASTERN EUROPE****Océ-Nederland B.V.**

Direct Export  
P.O. Box 101  
5900 MA  
Venlo  
The Netherlands  
Tel: (31-77) 359 39 00  
Fax: (31-77) 359 54 31

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# Index

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